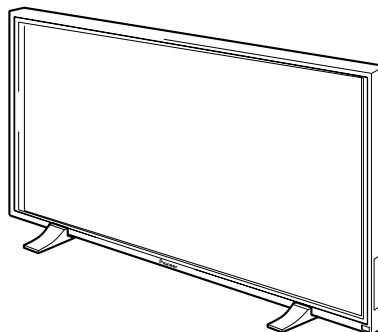


Service Manual

Pioneer



ORDER NO.
ARP3037

PLASMA DISPLAY

PDP-502MX

PDP-502MXE

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	Remarks
	PDP-502MX	PDP-502MXE		
LUCBW	○	—	AC100 – 120V	
YVLDK	—	○	AC100 – 240V	

● This service manual should be used together with the following manual(s):

Model	Order No.	Remarks
PDP-502MX	ARP3044	

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

1.1 SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and service technician.
6. Perform the following precautions against unwanted radiation and rise in internal temperature.
 - Always return the internal wiring to the original styling.
 - Attach parts (Ground, Rear Cover, Shield Case) surely after disassembly.

7. Perform the following precautions for the PDP panel.

- When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
- Make sure that the panel vent does not break. (Check that the cover is attached.)
- Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.

8. Pay attention to the following.

- Be sure to wire the fan. If the fan does not work, the temperature will rise and cause the protection circuit to operate.
- When the front case is removed, infrared ray is radiated and may disturb reception of the remote control unit.
- Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

Leakage Current Cold Check

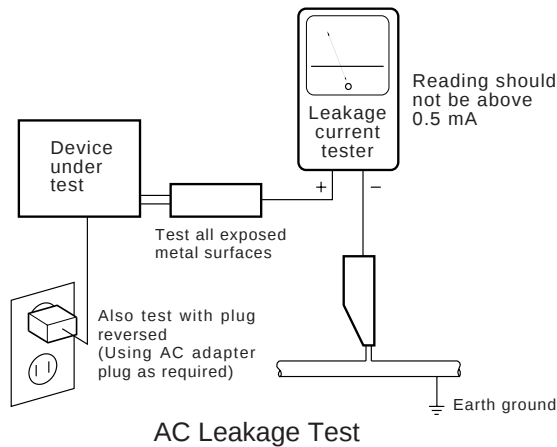
With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 0.3MW and a maximum resistor reading of 5MW. Any resistor value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).

Turn the AC power switch on.

Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.



ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

1.2 PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

1.3 CHARGED SECTION AND HIGH VOLTAGE GENERATING POINT

■ Charged Section

The places where the commercial AC power is used without passing through the power supply transformer.

If the places are touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. Therefore, be sure to connect the set via an insulated transformer and supply the current.

■ Charged Section (Power supply primary side)

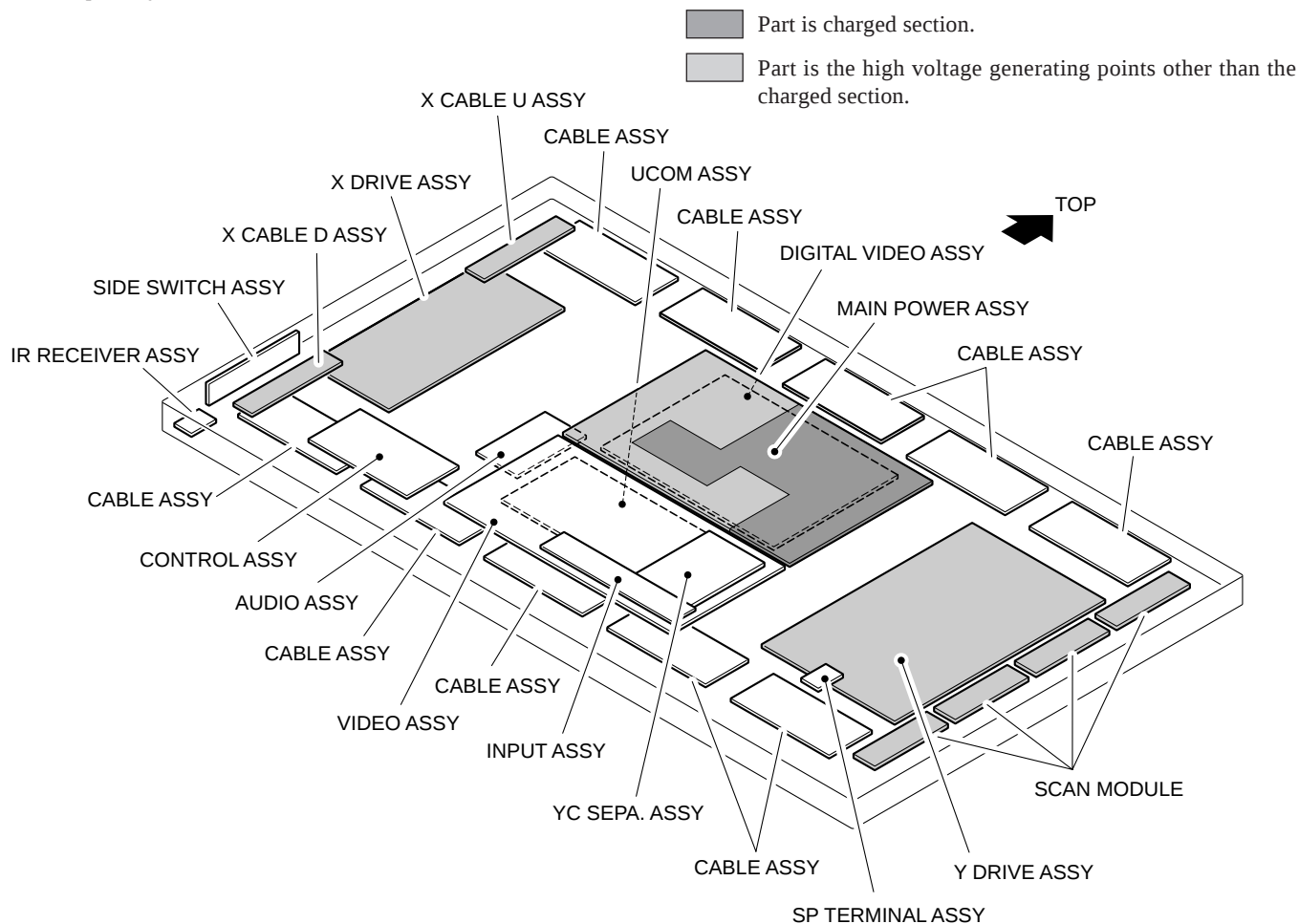
1. AC Power Cord
2. AC Inlet with Filter
3. Power Switch (S1)
4. Fuse (In the MAIN POWER ASSY)
5. STB Transformer and Converter Transformer
(In the MAIN POWER ASSY)
6. Other primary side of the MAIN POWER ASSY

■ High Voltage Generating Point

The places where voltage is 100V or more except for the charged places described above. If the places are touched, there is a risk of electric shock.

1. POWER SUPPLY MODULE (170V)
2. X DRIVE ASSY (170V)
3. Y DRIVE ASSY (–200V to 250V)
6. SCAN MODULE (250V)

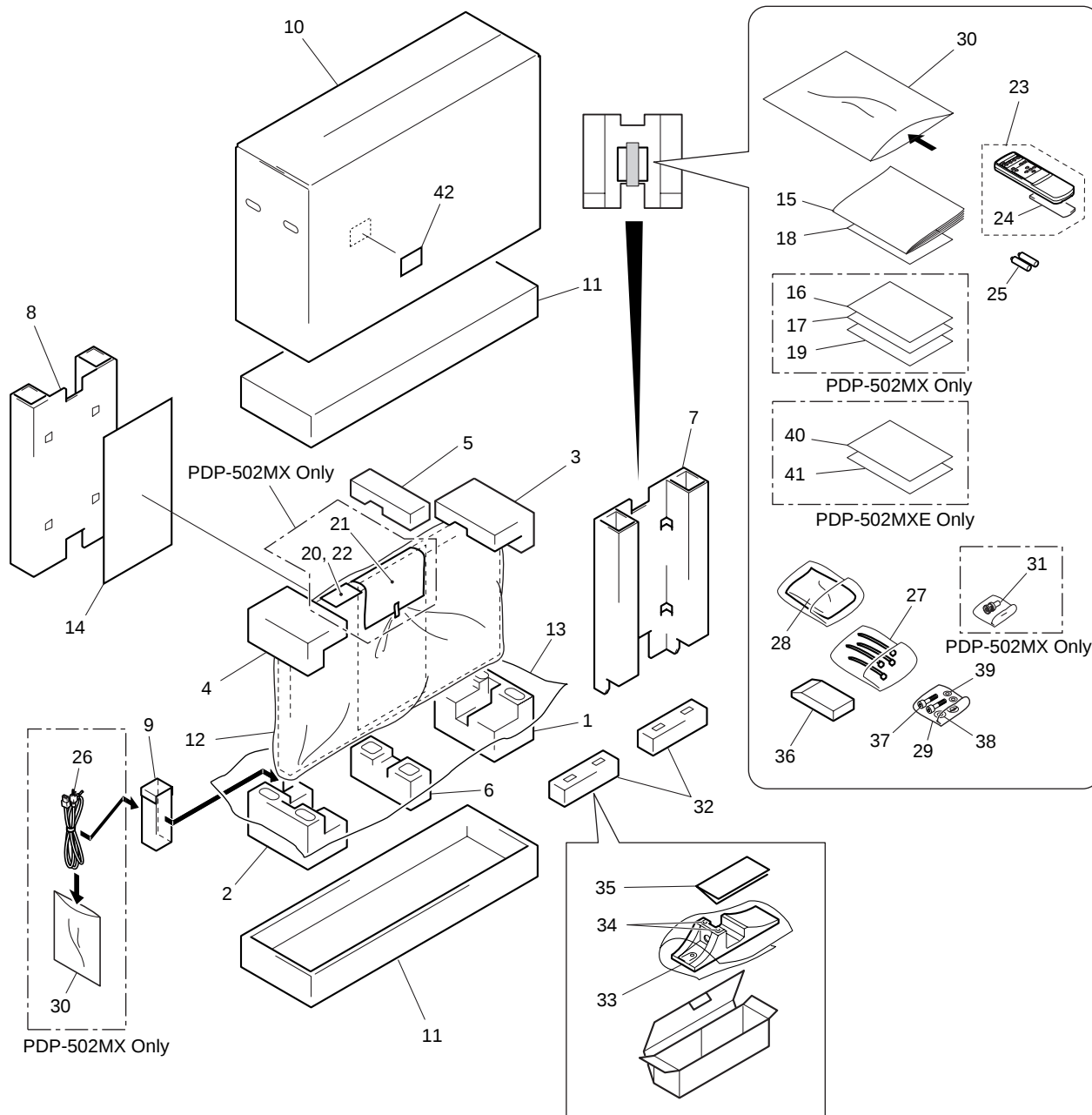
For the places, refer to the EXPLODED VIEWS, the SCHEMATIC DIAGRAM and the PCB CONNECTION DIAGRAM sections.



2. EXPLODED VIEWS AND PARTS LIST

- NOTES :
- Parts marked by “ NSP ” are generally unavailable because they are not in our Master Spare Parts List.
 - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Screw adjacent to ▼ mark on the product are used for disassembly.

2.1 PACKING



(1) PACKING PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Under Pad R	AHA2239	⚠	26	AC Power Cord	See contrast table (2)
	2	Under Pad L	AHA2240		27	Binder Assy	AEC1758
	3	Upper Pad R	AHA2241		28	Cleaning Cloth	AED1174
	4	Upper Pad L	AHA2242	NSP	29	Vinyl Bag (for Screw, Nut)	AHG-064
	5	Upper Pad C	AHA2243	NSP	30	Literature Bag	AHG-117
	6	Under Pad C	AHA2245		31	Pin/BNC Conversion Adaptor	See contrast table (2)
	7	Front Carton	AHB1210		32	Display Stand	AMR3168
	8	Rear Carton	AHB1211	NSP	33	Stand Bracket	ANG2351
	9	Code Case	AHC1033		34	Screw	CPZ30P080FZK
	10	Upper Carton	See contrast table (2)		35	Caution Sheet	ARM1175
	11	Under Carton	AHD3037		36	Remote Control Unit Case	AMR3169
	12	Mirror Mat	AHG1284		37	Hex Hole Bolt (M8×40)	SMZ80H400FZB
	13	Polyethylene Sheet	AHG1302		38	Washer	WAX1F200K320
	14	Protect Sheet	SHC-925		39	Washer	WB80FZB
	15	Operating Instructions	See contrast table (2)		40	Plasma Caution Sheet	See contrast table (2)
	16	Plasma Caution Sheet	See contrast table (2)		41	EMC Caution Sheet	See contrast table (2)
	17	Plasma Caution Sheet	See contrast table (2)		42	EMC Caution Label	See contrast table (2)
	18	Caution Sheet	ARM1168				
	19	Caution Sheet	See contrast table (2)				
NSP	20	Warranty Card	See contrast table (2)				
NSP	21	Warranty Card	See contrast table (2)				
NSP	22	Vinyl Pouch	See contrast table (2)				
	23	Remote Control Unit (CU-V159)	AXD1446				
	24	Battery Cover	AZN2098				
NSP	25	AA (R6/UM-3) Batteries	See contrast table (2)				

(2) CONTRAST TABLE

PDP-502MX/LUCBW and PDP-502MXE/YVLDK are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW	PDP-502MXE YVLDK	
	10	Upper Carton	AHD3035	AHD3043	
	15	Operating Instructions (English/French/Japanese)	ARD1029	Not used	
	15	Operating Instructions (English/French/German/Italian/Dutch/Spanish)	Not used	ARE1350	
	16	Plasma Caution Sheet	ARM1145	Not used	
	17	Plasma Caution Sheet	ARM1147	Not used	
	19	Caution Sheet	ARM1176	Not used	
NSP	20	Warranty Card	ARY1093	Not used	
NSP	21	Warranty Card	ARY1102	Not used	
NSP	22	Vinyl Pouch	AHG-195	Not used	
NSP	25	AA (R6/UM-3) Batteries	AEX1025	VEM1011	
⚠	26	AC Power Cord	ADG1178	Not used	
	31	Pin/BNC Conversion Adaptor	AKX1052	Not used	
	40	Plasma Caution Sheet	Not used	ARM1149	
	41	EMC Caution Sheet	Not used	ARM1164	
	42	EMC Caution Label	Not used	AAX2708	



(1) REAR CASE SECTION PARTS LIST

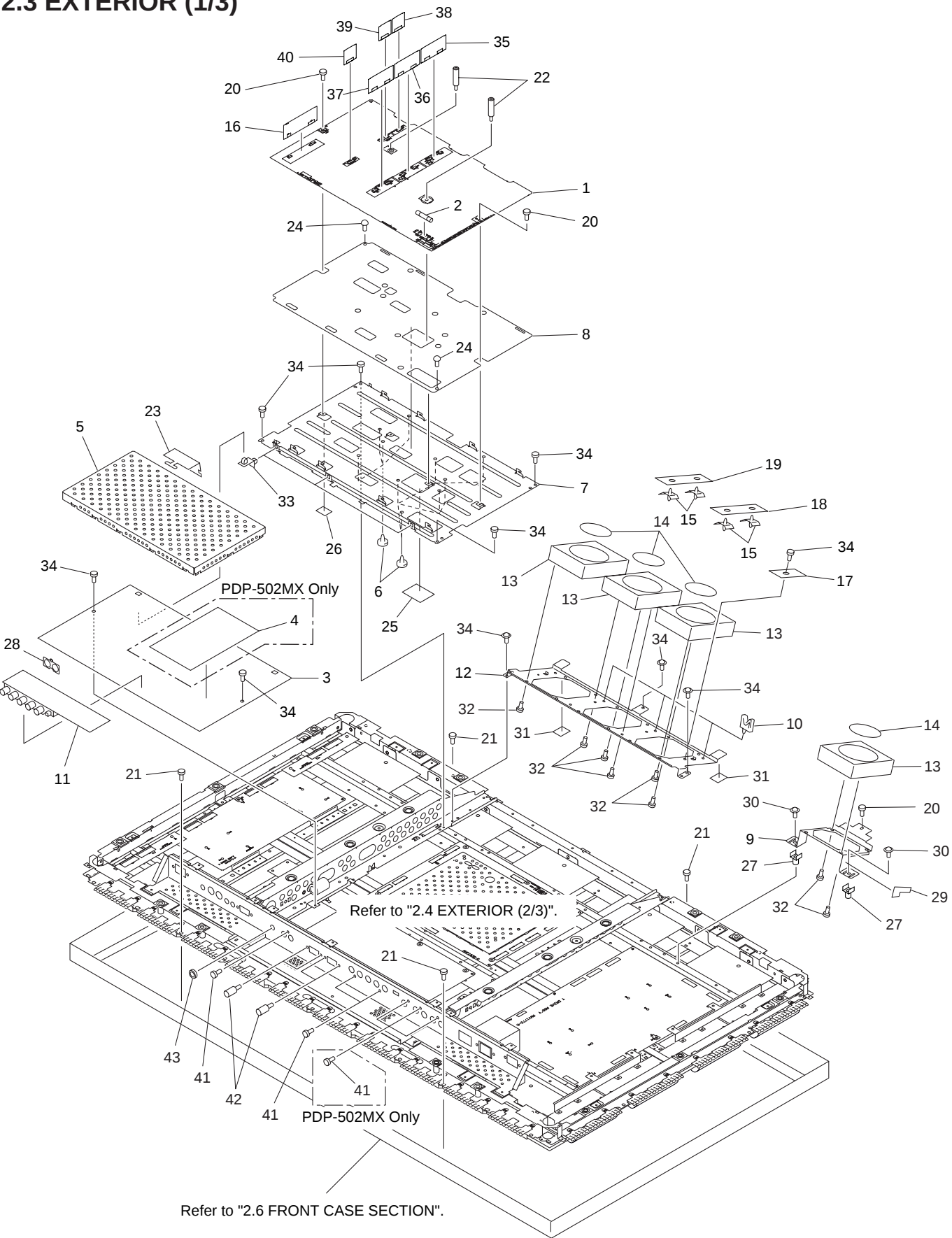
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Siricon Sheet L	AEH1031		21	Cleaning Label	See contrast table (2)
	2	Siricon Sheet S	AEH1030	NSP	22	Name Label	See contrast table (2)
	3	Barrier	AMR3166	NSP	23	UPC Code Label	See contrast table (2)
	4	Screw	BBZ40P160FZK	NSP	24	Earth Label	BAX1014
	5	Rear Case Frame	See contrast table (2)		25	Serial Seal	AAX2609
NSP	6	Rear Case	See contrast table (2)	NSP	26	Display Label	See contrast table (2)
	7	Stand Bolt	ABA1277	NSP	27	Label	VRW1629
	8	Screw Collar	AEC1848		28	Barrier Caution Label	See contrast table (2)
	9	Screw	AMZ30P100FZK		29	Connector Cover	See contrast table (2)
	10	Hole Rivet	AMR2969		30	Earth Plate	See contrast table (2)
	11	Solder Warning Label	See contrast table (2)		31	Washer	See contrast table (2)
	12	Screw Rivet	AEC1852		32	Terminal Label N	See contrast table (2)
	13	Terminal Label D	AAX2721				
	14	Terminal Label F	AAX2723				
	15	Terminal Label G	See contrast table (2)				
	16	Terminal Label A	See contrast table (2)				
	17	Caution Label	See contrast table (2)				
	18	Terminal Label C	See contrast table (2)				
	19	Terminal Label B	See contrast table (2)				
	20	Bolt Caution Label	See contrast table (2)				

(2) CONTRAST TABLE

PDP-502MX/LUCBW and PDP-502MXE/YVLDK are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW	PDP-502MXE YVLDK	
NSP	5	Rear Case Frame	AMR3147	AMR3170	
	6	Rear Case	ANE1581	ANE1587	
	11	Solder Warning Label	AAX2644	Not used	
	15	Terminal Label G	AAX2724	Not used	
	15	Terminal Label E	Not used	AAX2722	
	16	Terminal Label A	AAX2718	Not used	
	16	Terminal Label L	Not used	AAX2734	
	17	Caution Label	ARW1087	Not used	
	18	Terminal Label C	AAX2720	Not used	
	18	Terminal Label M	Not used	AAX2735	
	19	Terminal Label B	AAX2719	Not used	
	20	Bolt Caution Label	AAX2727	AAX2728	
	21	Cleaning Label	AAX2751	AAX2766	
NSP	22	Name Label	AAL2309	AAL2313	
NSP	23	UPC Code Label	AAX2712	AAX2749	
NSP	26	Display Label	AAX-359	Not used	
	28	Barrier Caution Label	AAX2759	Not used	
	29	Connector Cover	Not used	ANG2355	
	30	Earth Plate	Not used	ANK1639	
	31	Washer	Not used	ABE1077	
	32	Terminal Label N	Not used	AAX2736	

2.3 EXTERIOR (1/3)



(1) EXTERIOR (1/3) SECTION PARTS LIST

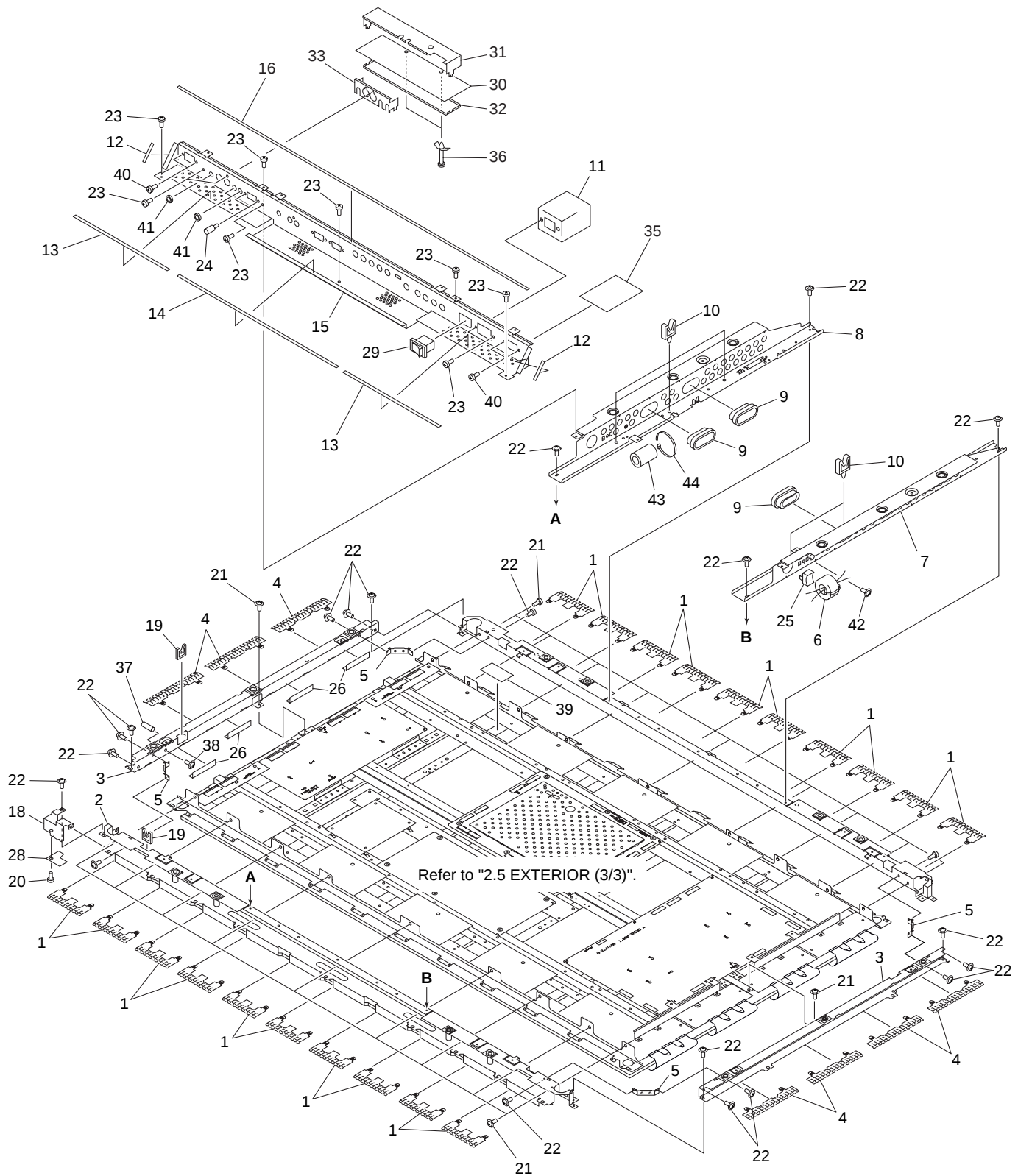
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
△ NSP	1	MAIN POWER ASSY	AWZ6405	31	Fan Angle Cushion	AED1193	
	2	Fuse (10A, FU101)	AEK1071	32	Screw	PPZ50P100FZK	
	3	VIDEO ASSY	See contrast table (2)	33	PCB Hinge	AEC1807	
	4	YC SEPA. ASSY	See contrast table (2)	34	Screw	AMZ30P060FMC	
	5	Analog Shield Cover	ANK1601	35	RCC CONTROL A ASSY	AWZ6406	
NSP	6	PCB Spacer	AEC1832	36	RCC CONTROL B ASSY	AWZ6407	
	7	Chassis	ANA1605	37	RCC CONTROL C ASSY	AWZ6408	
	8	Insulating Sheet	AMR3199	38	OTL CONTROL A ASSY	AWZ6409	
	9	Fan Frame A	ANG2330	39	OTL CONTROL B ASSY	AWZ6410	
	10	Wire Saddle	AEC1745	40	OTL CONTROL C ASSY	AWZ6411	
NSP	11	INPUT ASSY	AWZ6394	41	Screw	BPZ30P080FZK	
	12	Fan Frame C	ANG2332	42	Hexagon Screw	BBA1051	
	13	Fan Motor	AXM1036	43	Nut	ABN1033	
	14	Fan Label	AAX2746				
	15	Locking Card Spacer	AEC1736				
	16	VF DD CONVERTER ASSY	AWZ6412				
	17	SENSOR A ASSY	AWZ6400				
	18	FAN CABLE A ASSY	AWZ6403				
	19	FAN CABLE B ASSY	AWZ6404				
	20	Screw	BMZ30P060FCU				
NSP	21	Screw	BBZ40P160FZK				
	22	Spacer Screw	AEF1028				
	23	Wire Barrier	AMR3209				
	24	Nylon Rivet	AEC1671				
	25	Powder Guard L	AMR3201				
NSP	26	Powder Guard S	AMR3200				
	27	PCB Mold	AMR2115				
	28	2P Earth Plate	ANK1156				
	29	Fan Cushion	AEC1840				
	30	Screw	ABZ30P140FMC				

(2) CONTRAST TABLE

PDP-502MX/LUCBW and PDP-502MXE/YVLDK are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW	PDP-502MXE YVLDK	
	3	VIDEO ASSY	AWZ6441	AWZ6448	
	4	YC SEPA. ASSY	AWV1776	Not used	

2.4 EXTERIOR (2/3)



(1) EXTERIOR (2/3) SECTION PARTS LIST

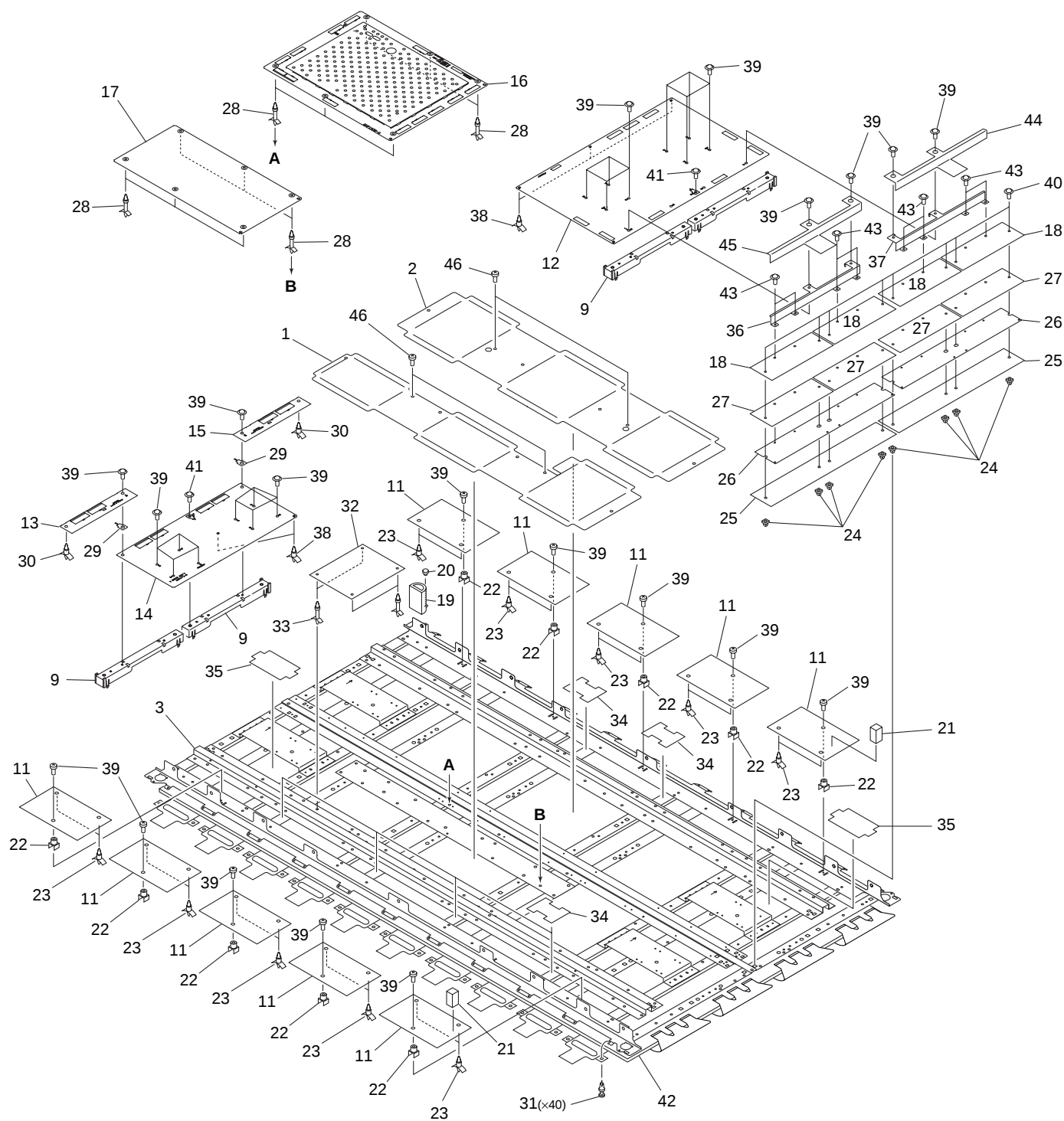
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Frame Shield H	ANK1609	NSP	31	Control Shield Case	ANK1626
	2	Frame H	ANG2343	NSP	32	Control Shield Cover	ANK1627
	3	Frame V	ANG2344	NSP	33	Control Shield Plate	ANG2380
	4	Frame Shield V	ANK1610		34		
	5	Corner Holder	ANG2347		35	SP TERMINAL ASSY	AWZ6415
	6	Ferrite Core (L1)	ATX1037		36	PCB Support	AEC1270
	7	Sub Frame R	ANG2334		37	Spacer	AEC1847
	8	Sub Frame L	ANG2333		38	Screw	AMZ30P100FZK
	9	Bush C	AEC1740	NSP	39	Drive Voltage Label	ARW1077
	10	Wire Saddle	AEC1745		40	Screw	BPZ30P080FZK
⚠	11	AC Inlet with Filter (CN1)	See contrast table (2)		41	Nut	ABN1033
	12	Shield Gasket B	ANK1612		42	Screw	PMB40P080FMC
	13	Shield Gasket D	ANK1614		43	Ferrite Core (L2)	ATX1031
	14	Shield Gasket C	ANK1613		44	Binder	AEC1851
	15	Terminal Panel	See contrast table (2)				
	16	Shield Gasket E	ANK1634				
	17						
NSP	18	IR Holder	ANG2346				
	19	Edging Saddle	AEC1737				
	20	Nylon Rivet	AEC1671				
	21	Screw	AMZ30P080FCU				
	22	Screw	AMZ30P060FMC				
	23	Screw	BMZ30P060FCU				
	24	Hexagon Screw	BBA1051				
	25	Ferrite Core Holder	AEC1818				
	26	FPC Cushion	AEB1341				
	27						
	28	IR RECEIVER ASSY	AWZ6399				
⚠	29	Power Switch (S1)	BSM1006				
	30	CONTROL ASSY	AWZ6414				

(2) CONTRAST TABLE

PDP-502MX/LUCBW and PDP-502MXE/YVLDK are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW	PDP-502MXE YVLDK	
⚠	11	AC Inlet with Filter (CN1)	AKP1202	AKP1193	
	15	Terminal Panel	ANG2341	ANG2353	

2.5 EXTERIOR (3/3)



(1) EXTERIOR (3/3) SECTION PARTS LIST

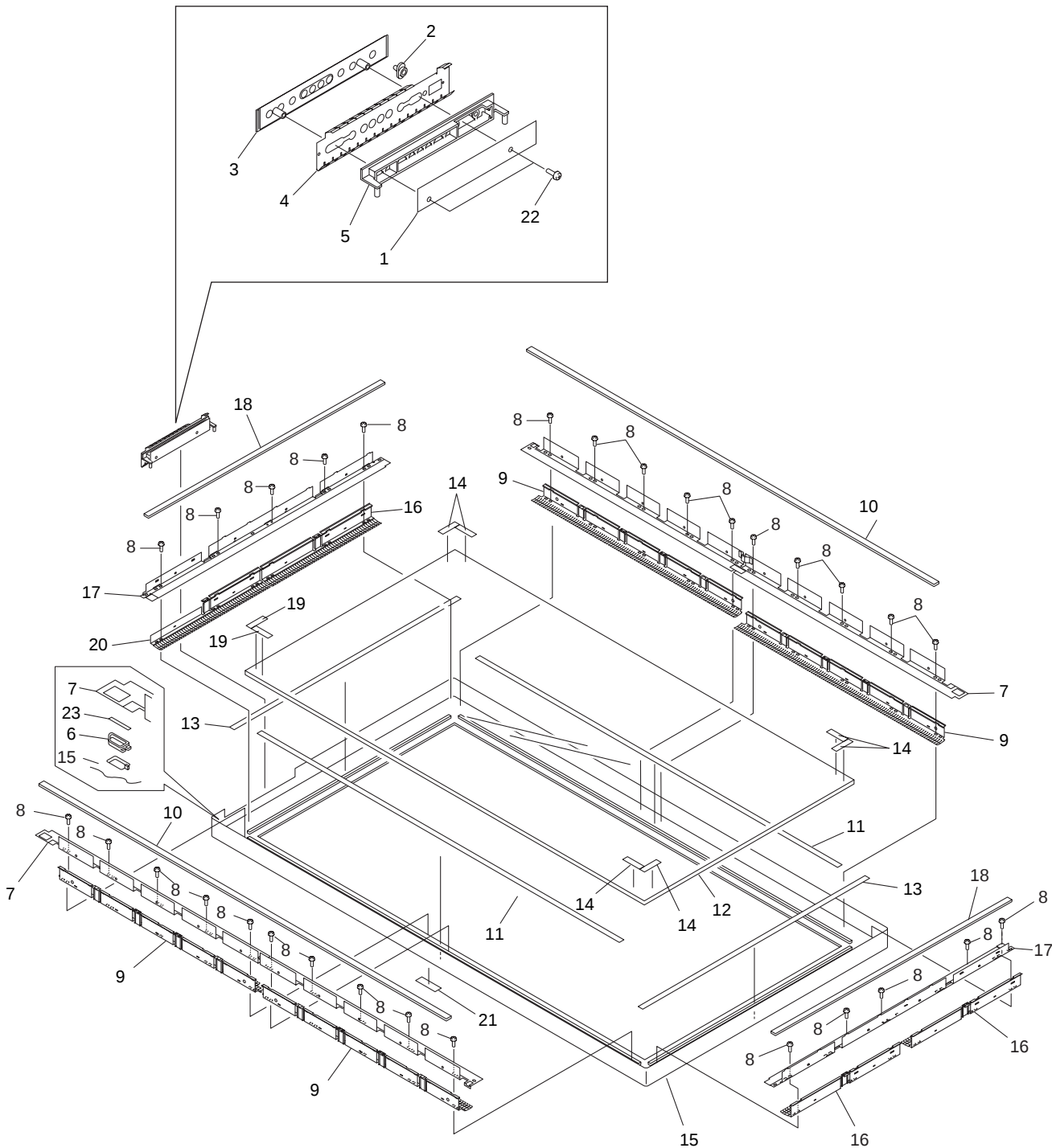
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
NSP	1	Panel Shield S	ANK1633		31	Plastic Rivet	AMR1066
NSP	2	Panel Shield L	ANK1632		32	AUDIO ASSY	AWZ6413
NSP	3	Frame Assy	ANA1626	NSP	33	PCB Spacer	AEC1446
	4			NSP	34	Blind Sheet S	AMR3202
	5			NSP	35	Blind Sheet L	AMR3203
	6			NSP	36	Hot Plate A	ANG2338
	7			NSP	37	Hot Plate B	ANG2339
	8				38	Circuit Board Spacer	AEC1795
	9	PCB Spacer	AMR3155		39	Screw	ABZ30P160FCU
	10				40	Screw	INC30P100FZK
	11	CABLE ASSY	AWV1816		41	Screw	IBZ30P250FCU
	12	Y DRIVE ASSY	AWV1818		42	Plasma Panel Assy	AAV1236
	13	X CABLE D ASSY	AWZ6397		43	Screw	ABZ30P080FCU
	14	X DRIVE ASSY	AWV1817		44	Hot Plate Barrier A	AMR3210
	15	X CABLE U ASSY	AWZ6396		45	Hot Plate Barrier B	AMR3211
	16	DIGITAL VIDEO ASSY	AWV1815		46	Screw	ABZ30P060FCU
	17	UCOM ASSY	See contrast table (2)				
	18	SCAN MODULE (IC41-IC44)	MC-16343				
NSP	19	Tube Cover	AMR3036				
NSP	20	Push Rivet	AEC1748				
	21	Insulator	AEZ1013				
	22	PCB Mold	AMR2115				
	23	Locking Spacer	AEC1794				
	24	Screw Grommet	AEC-905				
	25	Insulating Sheet	AMR3156				
NSP	26	Scan Heat Sink	ANH1558				
	27	Silicone Sheet	AEH1028				
NSP	28	Circuit Board Spacer	AEC1744				
	29	Earth Plate (KN1, KN2)	ANK-142				
	30	Locking Spacer	AEC1796				

(2) CONTRAST TABLE

PDP-502MX/LUCBW and PDP-502MXE/YVLDK are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW	PDP-502MXE YVLDK	
	17	UCOM ASSY	AWZ6395	AWZ6473	

2.6 FRONT CASE SECTION



(1) FRONT CASE SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	SIDE SWITCH ASSY	AWZ6398
	2	LED Lens	AAK2695
	3	Control Name Plate	AAK2757
	4	Control Shield	ANK1606
	5	Control Button	AAC1540
NSP	6	Lens	AAK2741
	7	Panel Holder Assy	ANG2386
	8	Screw	BPZ30P080FZK
	9	Panel Shield H	ANK1603
	10	Panel Cushion H	AED1189
	11	Front Cushion H	AED1191
	12	Protect Panel Assy	AMR3163
	13	Front Cushion V	AED1192
	14	Corner Cushion	AEB1360
	15	Front Case	See contrast table (2)
NSP	16	Panel Shield V	ANK1604
	17	Panel Holder V	ANG2337
	18	Panel Cushion V	AED1190
	19	Corner Gasket	ANK1635
NSP	20	Panel Shield VM	ANK1605
	21	Pioneer Seal	See contrast table (2)
	22	Screw	BBZ30P080FMC
	23	Shield	ANK1640

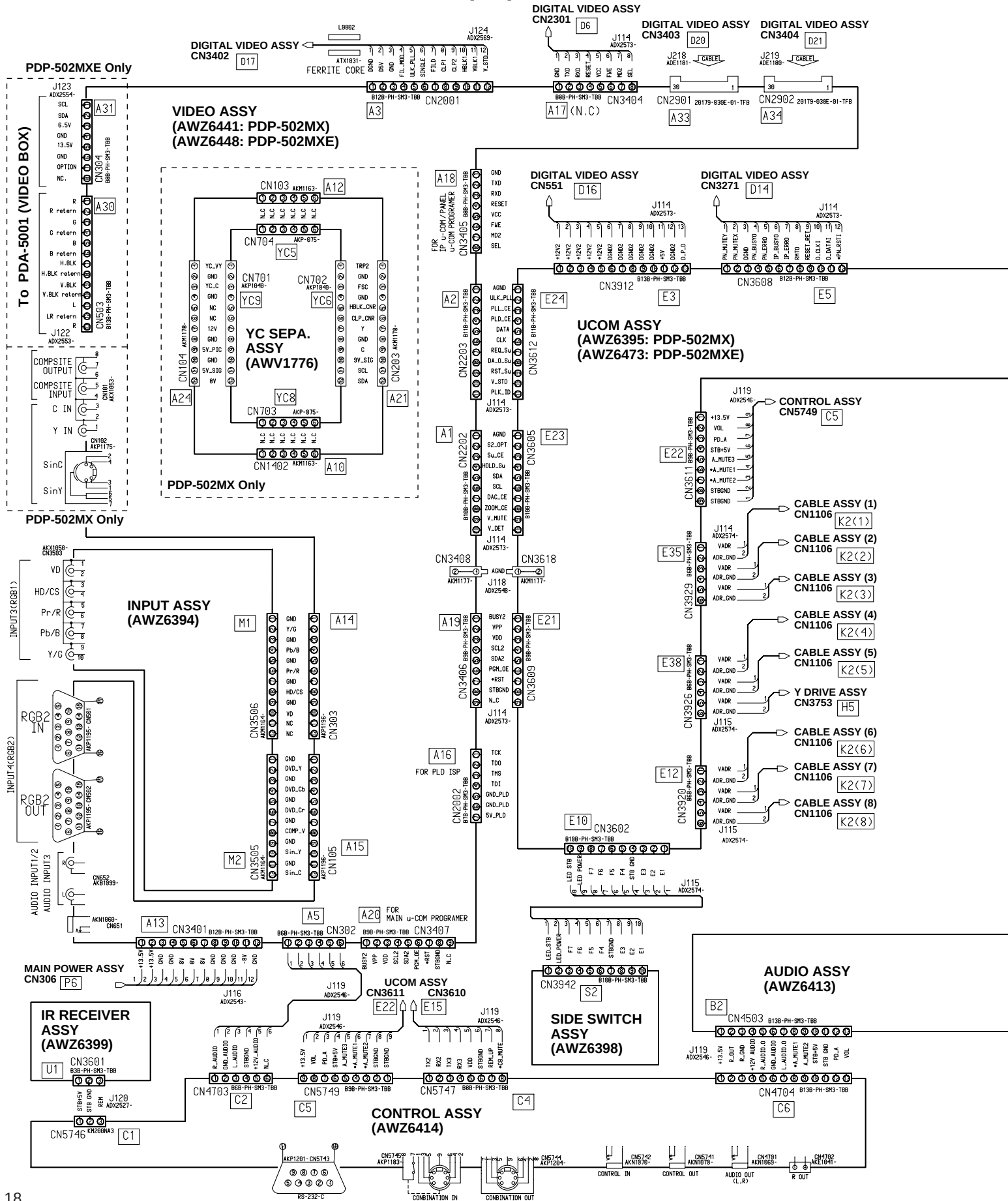
(2) CONTRAST TABLE

PDP-502MX/LUCBW and PDP-502MXE/YVLDK are constructed the same except for the following:

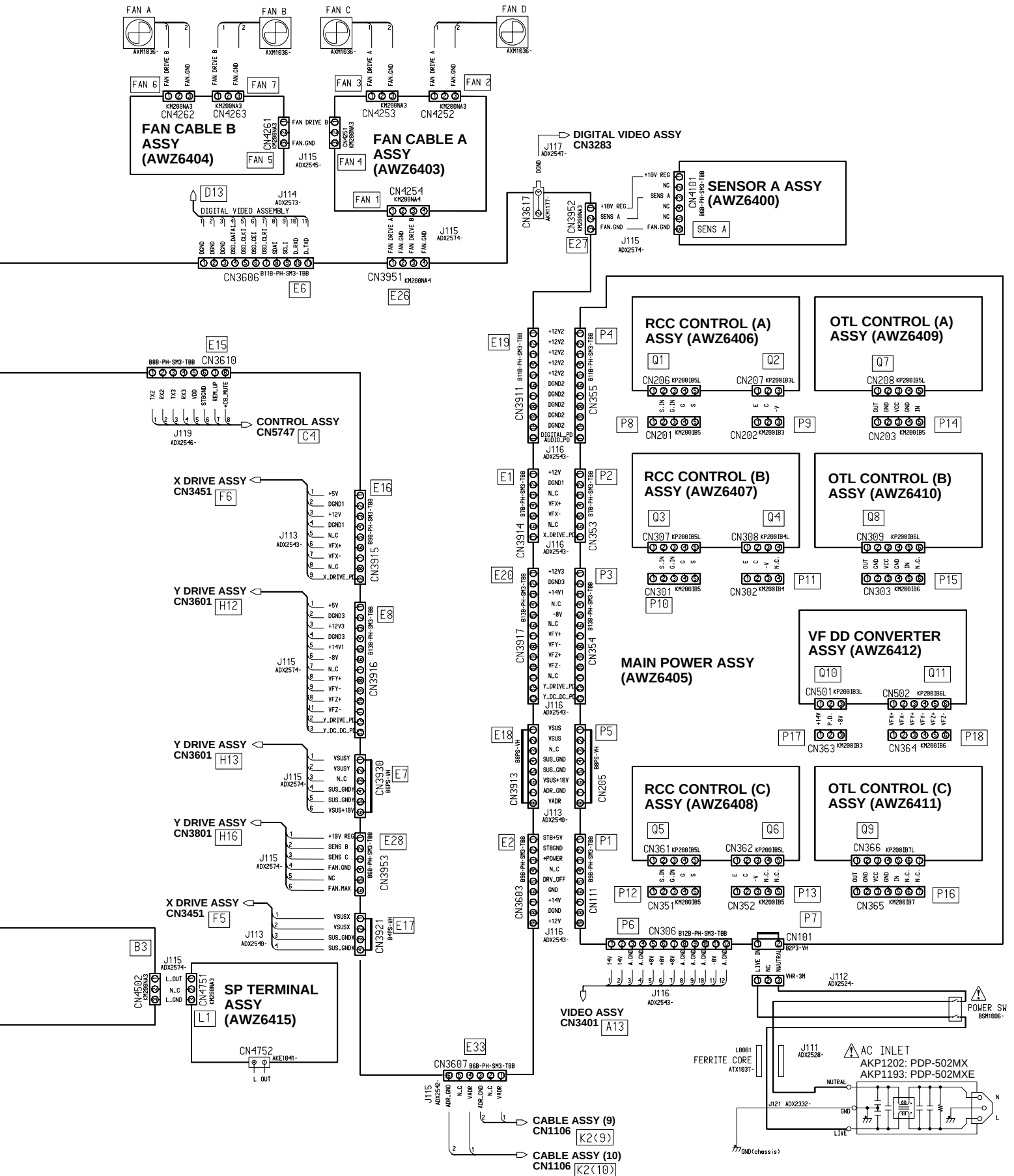
Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW	PDP-502MXE YVLDK	
	15	Front Case	AMB2649	AMB2672	
	21	Pioneer Seal	ARW1091	Not used	

3. OVERALL CONNECTION DIAGRAM AND BLOCK DIAGRAM

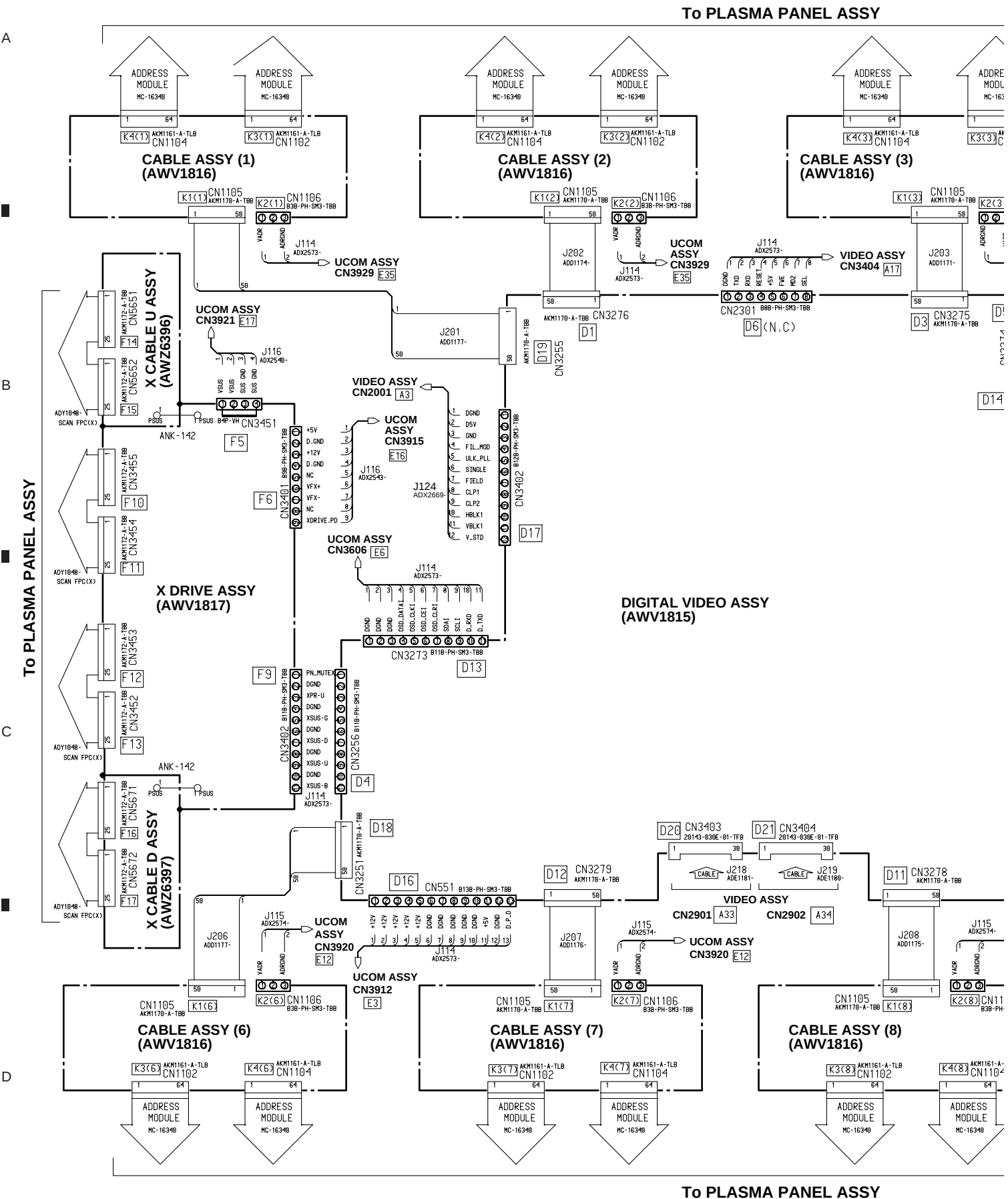
3.1 OVERALL CONNECTION DIAGRAM (1/2)

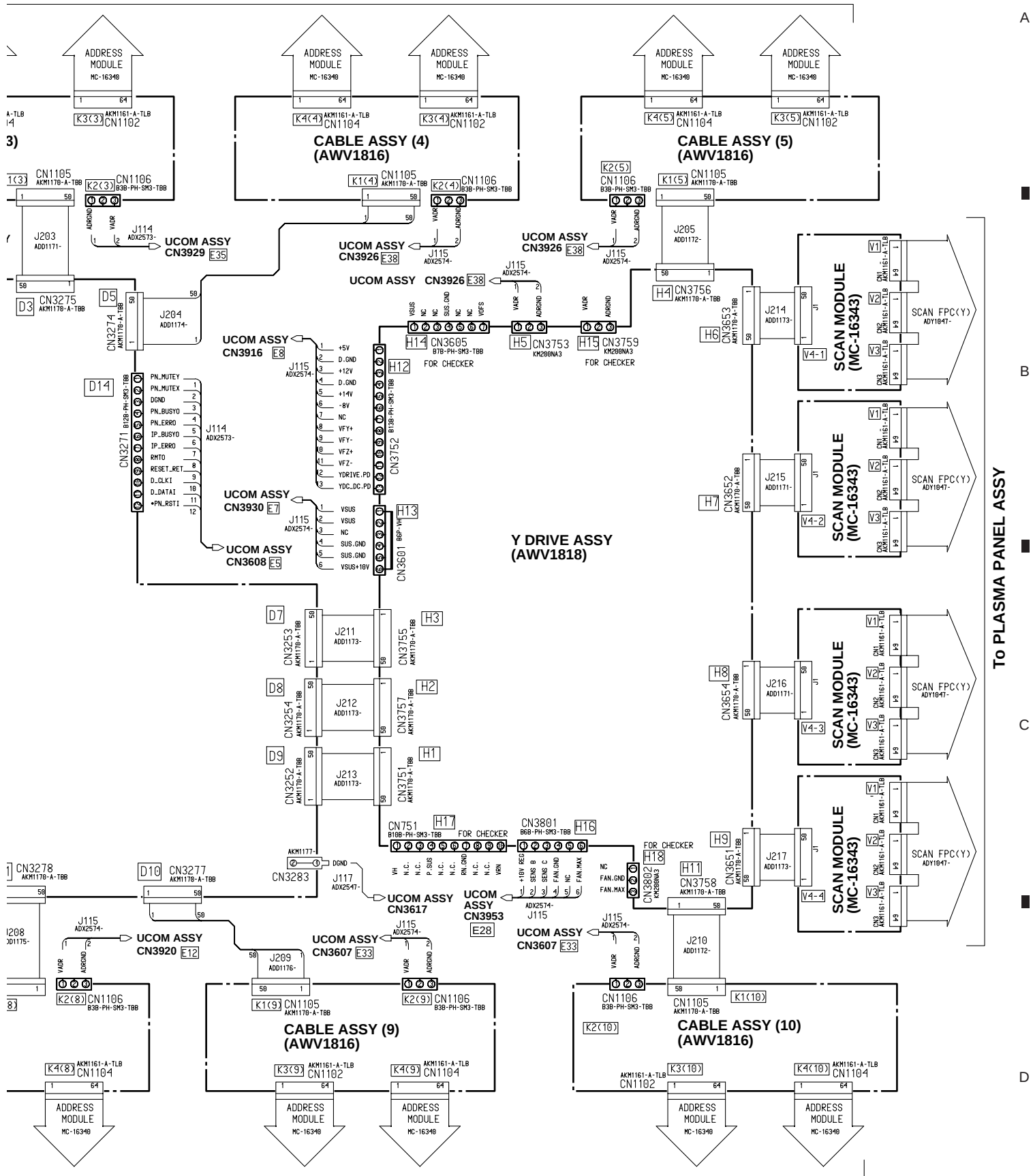


Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "PCB PARTS LIST".



3.2 OVERALL CONNECTION DIAGRAM (2/2)





Each Flexible Flat Cable Terminal Name

64P FFC	CABLE _____ PANEL			CABLE _____ PANEL			64P FFC	CABLE _____ PANEL			CABLE _____ PANEL		
K3 ONT102 ↑ ↓ PANEL	1	V ADR_OUT	64	33	V ADR_OUT	32	K4 ONT104 ↑ ↓ PANEL	1	V ADR_OUT	64	33	V ADR_OUT	32
	2	V ADR_OUT	63	34		31		2	V ADR_OUT	63	34		31
	3	V ADR_OUT	62	35	ADRGND	30		3	V ADR_OUT	62	35	ADRGND	30
	4		61	36	DATA_R_A2	29		4		61	36	DATA_R_B2	29
	5		60	37	DATA_G_A2	28		5		60	37	DATA_G_B2	28
	6	ADRGND	59	38	DATA_B_A2	27		6	ADRGND	59	38	DATA_B_B2	27
	7	ADRGND	58	39	CLR_A	26		7	ADRGND	58	39	CLR_B	26
	8	DATA_R_A4	57	40	CLK_A	25		8	DATA_R_B4	57	40	CLK_B	25
	9	DATA_G_A4	56	41	+5V	24		9	DATA_G_B4	56	41	+5V	24
	10	DATA_B_A4	55	42	DGND	23		10	DATA_B_B4	55	42	DGND	23
	11	CLR_A	54	43	LE_A	22		11	CLR_B	54	43	LE_B	22
	12	CLK_A	53	44	HBLK_A	21		12	CLK_B	53	44	HBLK_B	21
	13	+5V	52	45	LBLK_A	20		13	+5V	52	45	LBLK_B	20
	14	DGND	51	46	HZ_A	19		14	DGND	51	46	HZ_B	19
	15	LE_A	50	47	DATA_R_A1	18		15	LE_B	50	47	DATA_R_B1	18
	16	HBLK_A	49	48	DATA_G_A1	17		16	HBLK_B	49	48	DATA_G_B1	17
	17	LBLK_A	48	49	DATA_B_A1	16		17	LBLK_B	48	49	DATA_B_B1	16
	18	HZ_A	47	50	CLR_A	15		18	HZ_B	47	50	CLR_B	15
	19	DATA_R_A3	46	51	CLKB_A	14		19	DATA_R_B3	46	51	CLKB_B	14
	20	DATA_G_A3	45	52	+5V	13		20	DATA_G_B3	45	52	+5V	13
	21	DATA_B_A3	44	53	DGND	12		21	DATA_B_B3	44	53	DGND	12
	22	CLR_A	43	54	LEB_A	11		22	CLR_B	43	54	LEB_B	11
	23	CLKB_A	42	55	HBLK_A	10		23	CLKB_B	42	55	HBLK_B	10
	24	+5V	41	56	LBLK_A	9		24	+5V	41	56	LBLK_B	9
	25	DGND	40	57	HZ_A	8		25	DGND	40	57	HZ_B	8
	26	LEB_A	39	58	ADRGND	7		26	LEB_B	39	58	ADRGND	7
	27	HBLK_A	38	59	ADRGND	6		27	HBLK_B	38	59	ADRGND	6
	28	LBLK_A	37	60		5		28	LBLK_B	37	60		5
	29	HZ_A	36	61		4		29	HZ_B	36	61		4
	30	ADRGND	35	62	V ADR_OUT	3		30	ADRGND	35	62	V ADR_OUT	3
	31		34	63	V ADR_OUT	2		31		34	63	V ADR_OUT	2
	32	V ADR_OUT	33	64	V ADR_OUT	1		32	V ADR_OUT	33	64	V ADR_OUT	1

50P FFC	SCANMOD	YDRIVE	SCANMOD	YDRIVE	
J214 ADD1173	1	VH	50	26 CLK	25
V4-1	2	VH	49	27 GNH	24
DN12	3	VH	48	28 GNH	23
↕	4	VH	47	29 LE	22
H6	5	NC	46	30 GNH	21
DN353	6	NC	45	31 GNH	20
J215 ADD1171	7	IC5V	44	32 CLR	19
V4-2	8	IC5V	43	33 GNDH	18
DN22	9	NC	42	34 GNDH	17
↕	10	NC	41	35 LBLK	16
H7	11	OE2-a	40	36 GNDH	15
DN352	12	NC	39	37 GNDH	14
J216 ADD1171	13	NC	38	38 HBLK	13
V4-3	14	OE2-b	37	39 NC	12
DN32	15	NC	36	40 NC	11
↕	16	NC	35	41 OE1-a	10
H8	17	OE2-c	34	42 NC	9
DN354	18	NC	33	43 NC	8
J217 ADD1173	19	NC	32	44 OE1-b	7
V4-4	20	SI	31	45 NC	6
DN42	21	GNH	30	46 NC	5
↕	22	GNH	29	47 OE1-c	4
H9	23	R/L	28	48 NC	3
DN351	24	GNH	27	49 NC	2
	25	GNH	26	50 SO	1

64P FFC	SCANMOD. _____	PANEL	SCANMOD. _____	PANEL		
V1 ONT1 ↑ ↓ PANEL	1	a1	64	33	a33	32
	2	a2	63	34	a34	31
	3	a3	62	35	a35	30
	4	a4	61	36	a36	29
	5	a5	60	37	a37	28
	6	a6	59	38	a38	27
	7	a7	58	39	a39	26
	8	a8	57	40	a40	25
	9	a9	56	41	a41	24
	10	a10	55	42	a42	23
	11	a11	54	43	a43	22
	12	a12	53	44	a44	21
	13	a13	52	45	a45	20
	14	a14	51	46	a46	19
	15	a15	50	47	a47	18
	16	a16	49	48	a48	17
	17	a17	48	49	a49	16
	18	a18	47	50	a50	15
	19	a19	46	51	a51	14
	20	a20	45	52	a52	13
	21	a21	44	53	a53	12
	22	a22	43	54	a54	11
	23	a23	42	55	a55	10
	24	a24	41	56	a56	9
	25	a25	40	57	a57	8
	26	a26	39	58	a58	7
	27	a27	38	59	a59	6
	28	a28	37	60	a60	5
	29	a29	36	61	a61	4
	30	a30	35	62	a62	3
	31	a31	34	63	a63	2
	32	a32	33	64	a64	1

64P FFC	SCANMOD.	PANEL	SCANMOD.	PANEL		
V2 ONT2 ↑ ↓ PANEL	1	a65	64	33	a97	32
	2	a66	63	34	a98	31
	3	a67	62	35	a99	30
	4	a68	61	36	a100	29
	5	a69	60	37	a101	28
	6	a70	59	38	a102	27
	7	a71	58	39	a103	26
	8	a72	57	40	a104	25
	9	a73	56	41	a105	24
	10	a74	55	42	a106	23
	11	a75	54	43	a107	22
	12	a76	53	44	a108	21
	13	a77	52	45	a109	20
	14	a78	51	46	a110	19
	15	a79	50	47	a111	18
	16	a80	49	48	a112	17
	17	a81	48	49	a113	16
	18	a82	47	50	a114	15
	19	a83	46	51	a115	14
	20	a84	45	52	a116	13
	21	a85	44	53	a117	12
	22	a86	43	54	a118	11
	23	a87	42	55	a119	10
	24	a88	41	56	a120	9
	25	a89	40	57	a121	8
	26	a90	39	58	a122	7
	27	a91	38	59	a123	6
	28	a92	37	60	a124	5
	29	a93	36	61	a125	4
	30	a94	35	62	a126	3
	31	a95	34	63	a127	2
	32	a96	33	64	a128	1

64P FFC	SCANMOD.	_____	PANEL	SCANMOD.	_____	PANEL
V3 DN31 ↑ ↓ PANEL	1	a129	64	33	a161	32
	2	a130	63	34	a162	31
	3	a131	62	35	a163	30
	4	a132	61	36	a164	29
	5	a133	60	37	a165	28
	6	a134	59	38	a166	27
	7	a135	58	39	a167	26
	8	a136	57	40	a168	25
	9	a137	56	41	a169	24
	10	a138	55	42	a170	23
	11	a139	54	43	a171	22
	12	a140	53	44	a172	21
	13	a141	52	45	a173	20
	14	a142	51	46	a174	19
	15	a143	50	47	a175	18
	16	a144	49	48	a176	17
	17	a145	48	49	a177	16
	18	a146	47	50	a178	15
	19	a147	46	51	a179	14
	20	a148	45	52	a180	13
	21	a149	44	53	a181	12
	22	a150	43	54	a182	11
	23	a151	42	55	a183	10
	24	a152	41	56	a184	9
	25	a153	40	57	a185	8
	26	a154	39	58	a186	7
	27	a155	38	59	a187	6
	28	a156	37	60	a188	5
	29	a157	36	61	a189	4
	30	a158	35	62	a190	3
	31	a159	34	63	a191	2
	32	a160	33	64	a192	1

25P FFC	XDRIVE	PANEL	XDRIVE	PANEL
	X CABLE U	PANEL	X CABLE U	PANEL
	X CABLE D	PANEL	X CABLE D	PANEL
F10 F11 CN3431 CN3432	1	PSUS 25	14	PSUS 12
F12 F13 CN3433 CN3434	2	PSUS 24	15	PSUS 11
F14 F15 CN5651 CN5652	3	PSUS 23	16	PSUS 10
F16 F17 CN5671 CN5672	4	PSUS 22	17	PSUS 9
	5	PSUS 21	18	PSUS 8
	6	PSUS 20	19	PSUS 7
	7	PSUS 19	20	PSUS 6
	8	PSUS 18	21	PSUS 5
	9	PSUS 17	22	PSUS 4
	10	PSUS 16	23	PSUS 3
	11	PSUS 15	24	PSUS 2
	12	PSUS 14	25	PSUS 1
	13	PSUS 13		

30P CABLE	VIDEO	DIGITAL	VIDEO	DIGITAL
J218 A33 CN2901	1	BB0 30	16	GB7 15
	2	BB1 29	17	RB0 14
	3	BB2 28	18	RB1 13
	4	BB3 27	19	RB2 12
	5	BB4 26	20	RB3 11
	6	BB5 25	21	RB4 10
	7	BB6 24	22	RB5 9
	8	BB7 23	23	RB6 8
	9	GB0 22	24	RB7 7
	10	GB1 21	25	DGND 6
	11	GB2 20	26	DGND 5
	12	GB3 19	27	DGND 4
	13	GB4 18	28	DGND 3
	14	GB5 17	29	DGND 2
	15	GB6 16	30	DGND 1

30P CABLE	VIDEO	DIGITAL	VIDEO	DIGITAL
J219 A34 CN2902	1	VD 25	16	GA1 12
	2	HD 24	17	GA2 11
	3	DE 23	18	GA3 10
	4	CLK 22	19	GA4 9
	5	CLK 21	20	GA5 8
	6	FLD 20	21	GA6 7
	7	BA0 19	22	GA7 6
	8	BA1 18	23	RA0 5
	9	BA2 17	24	RA1 4
	10	BA3 16	25	RA2 3
	11	AB4 15	26	RA3 2
	12	BA5 14	27	RA4 1
	13	BA6 13	28	RA5 3
	14	BA7 12	29	RA6 2
	15	GA0 11	30	RA7 1

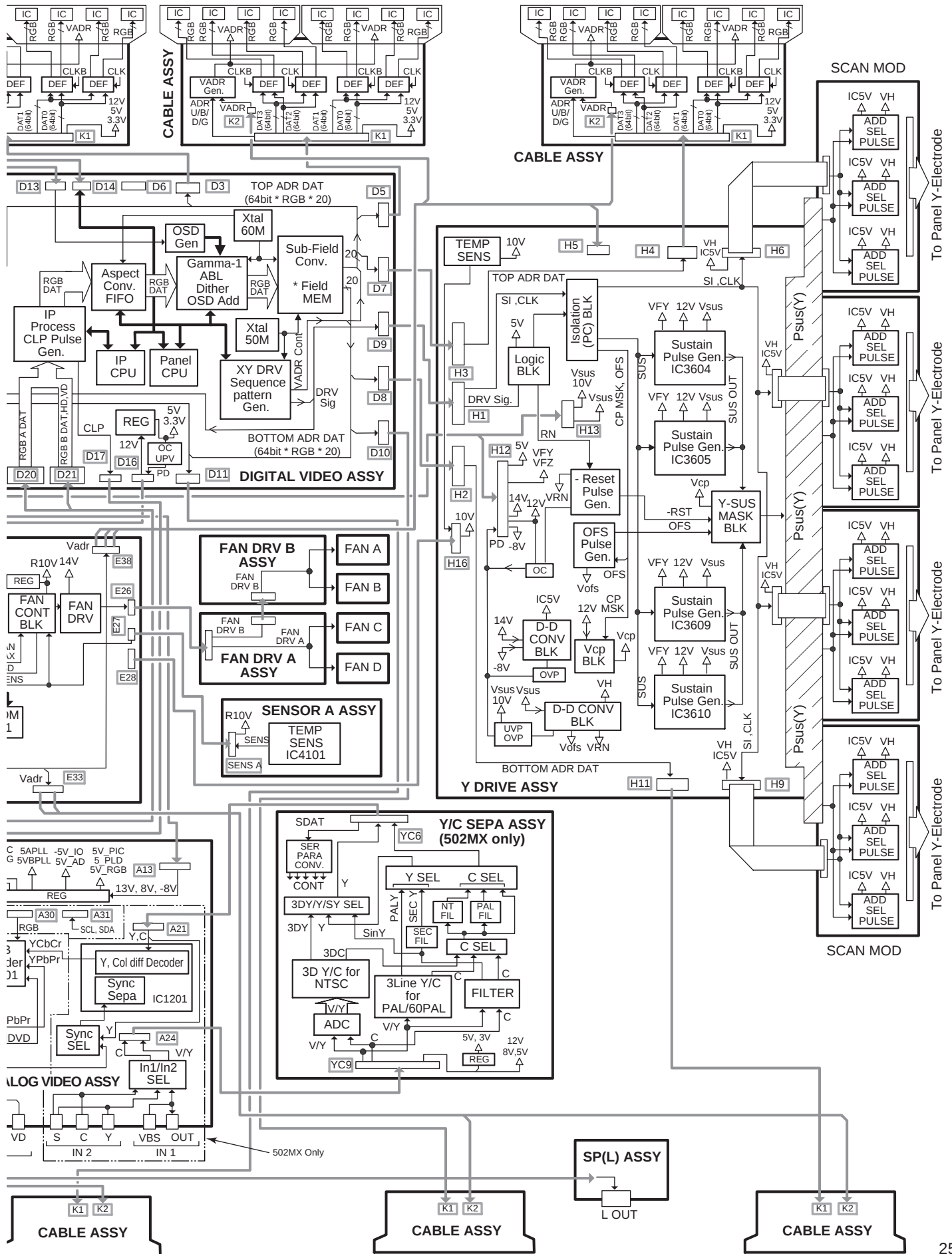
50P FFC	CABLE	DIGITAL	CABLE	DIGITAL
	CABLE	Y DRIVE	CABLE	Y DRIVE
	1	50	26	CLKB 25
	2	49	27	CLK 24
	3	48	28	CLR 23
	4	5VCC 47	29	LBLK 22
	5	5VCC 46	30	HBLK 21
	6	5VCC 45	31	HZ 20
	7	5VCC 44	32	19
	8	5VCC 43	33	ADR_G 18
	9	5VCC 42	34	17
	10	DGND 41	35	ADR_D 16
	11	12VCC 40	36	15
	12	12VCC 39	37	ADR_B 14
	13	DGND 38	38	13
	14	3VCC 37	39	ADR_U 12
	15	3VCC 36	40	11
	16	DGND 35	41	DATA_R_1 10
	17	DATA_R_3 34	42	DATA_G_1 9
	18	DATA_G_3 33	43	DATA_B_1 8
	19	DATA_B_3 32	44	DGND 7
	20	DGND 31	45	DATA_R_0 6
	21	DATA_R_2 30	46	DATA_G_0 5
	22	DATA_G_2 29	47	DATA_B_0 4
	23	DATA_B_2 28	48	3
	24	DGND 27	49	2
	25	LE 26	50	1

50P FFC	CABLE	DIGITAL	CABLE	DIGITAL
	CABLE	Y DRIVE	CABLE	Y DRIVE
	1	50	26	CLKB 25
	2	49	27	CLK 24
	3	48	28	CLR 23
	4	5VCC 47	29	LBLK 22
	5	5VCC 46	30	HBLK 21
	6	5VCC 45	31	HZ 20
	7	5VCC 44	32	19
	8	5VCC 43	33	ADR_G 18
	9	5VCC 42	34	17
	10	DGND 41	35	ADR_D 16
	11	12VCC 40	36	15
	12	12VCC 39	37	ADR_B 14
	13	DGND 38	38	13
	14	3VCC 37	39	ADR_U 12
	15	3VCC 36	40	11
	16	DGND 35	41	DATA_B_3 10
	17	DATA_B_1 34	42	DATA_G_3 9
	18	DATA_G_1 33	43	DATA_R_3 8
	19	DATA_R_1 32	44	DGND 7
	20	DGND 31	45	DATA_B_2 6
	21	DATA_B_0 30	46	DATA_G_2 5
	22	DATA_G_0 29	47	DATA_R_2 4
	23	DATA_R_0 28	48	3
	24	DGND 27	49	2
	25	LE 26	50	1

50P FFC	DIGITAL	Y DRIVE	DIGITAL	Y DRIVE
J211 ADD1173 D7 CN3253	1	NC 50	26	LE 25
	2	NC 49	27	DGND 24
	3	NC 48	28	DATB2U 23
	4	DATB0U 47	29	DATG2U 22
	5	DATG0U 46	30	DATR2U 21
	6	DATR0U 45	31	DGND 20
	7	DGND 44	32	DATB3U 19
	8	DATB1U 43	33	DATG3U 18
	9	DATG1U 42	34	DATR3U 17
	10	DATR1U 41	35	DGND 16
	11	NC 40	36	+3.3V 15
	12	ADRU0U 39	37	+3.3V 14
	13	NC 38	38	DGND 13
	14	ADRB0U 37	39	+12V 12
	15	NC 36	40	+12V 11
	16	ADRD0U 35	41	DGND 10
	17	NC 34	42	+5V 9
	18	ADRG0U 33	43	+5V 8
	19	NC 32	44	+5V 7
	20	HZ 31	45	+5V 6
	21	HBLK 30	46	+5V 5
	22	LBLK 29	47	+5V 4
	23	CLR 28	48	NC 3
	24	CLK 27	49	NC 2
	25	CLKB 26	50	NC 1

50P FFC	DIGITAL	Y DRIVE	DIGITAL	Y DRIVE
J212 ADD1173 D8 CN3254	1	NC 50	26	LE 25
	2	NC 49	27	DGND 24
	3	NC 48	28	DATR0L 23
	4	DATR2L 47	29	DATG0L 22
	5	DATG2L 46	30	DATB0L 21
	6	DATB2L 45	31	DGND 20
	7	DGND 44	32	DATR1L 19
	8	DATR3L 43	33	DATG1L 18
	9	DATG3L 42	34	DATB1L 17
	10	DATB3L 41	35	DGND 16
	11	NC 40	36	+3.3V 15
	12	ADRU0L 39	37	+3.3V 14
	13	NC 38	38	DGND 13
	14	ADRB0L 37	39	+12V 12
	15	NC 36	40	+12V 11
	16	ADRD0L 35	41	DGND 10
	17	NC 34	42	+5V 9
	18	ADRG0L 33	43	+5V 8
	19	NC 32	44	+5V 7
	20	HZ 31	45	+5V 6
	21	HBLK 30	46	+5V 5
	22	LBLK 29	47	+5V 4
	23	CLR 28	48	NC 3
	24	CLK 27	49	NC 2
	25	CLKB 26	50	NC 1

50P FFC	DIGITAL	Y DRIVE	DIGITAL	Y DRIVE
J213 ADD1173 D9 CN3252	1	YR0 50	26	DGND 25
	2	NC 49	27	YSUS-G 24
	3	YR1 48	28	DGND 23
	4	NC 47	29	YNR-D 22
	5	YSUS_PD 46	30	DGND 21
	6	NC 45	31	YNR-U 20
	7	OE 44	32	DGND 19
	8	NC 43	33	YSUS-MSK 18
	9	S1 42	34	DGND 17
	10	DGND 41	35	YCP-MSK 16
	11	CLK 40	36	DGND 15
	12	DGND 39	37	OFS 14
	13	LE-S 38	38	DGND 13
	14	DGND 37	39	YR4 12
	15	CLR 36	40	DGND 11
	16	DGND 35	41	YR3 10
	17	LBLK 34	42	DGND 9
	18	DGND 33	43	YR5 8
	19	HBLK 32	44	DGND 7
	20	DGND 31	45	PNL_MUTEY 6
	21	YSUS-B 30	46	DGND 5
	22	DGND 29	47	YR6 4
	23	YSUS-U 28	48	DGND 3
	24	DGND 27	49	YR7 2
	25	YSUS-D 26	50	DGND 1



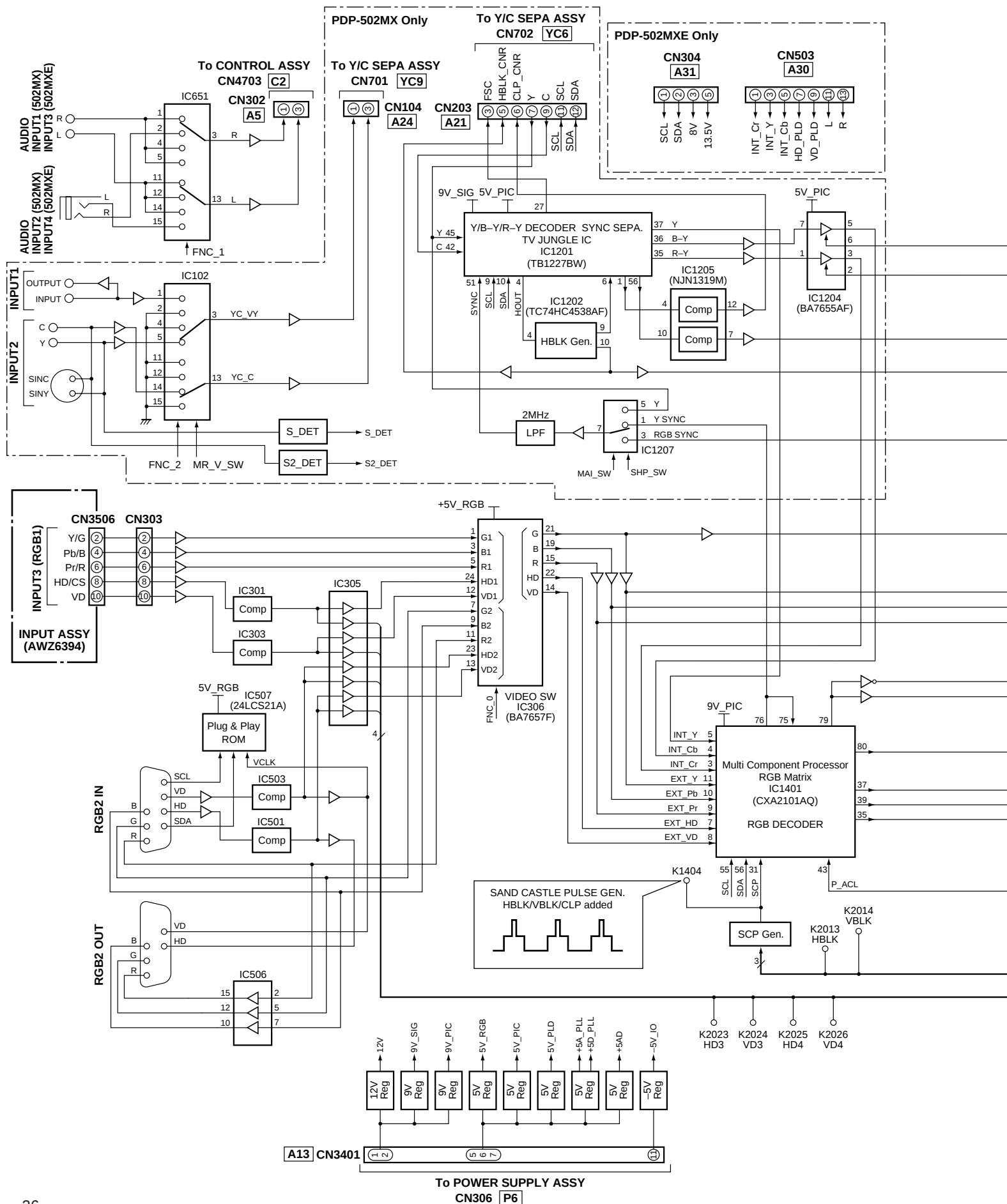
3.3.2 VIDEO ASSY SECTION

A

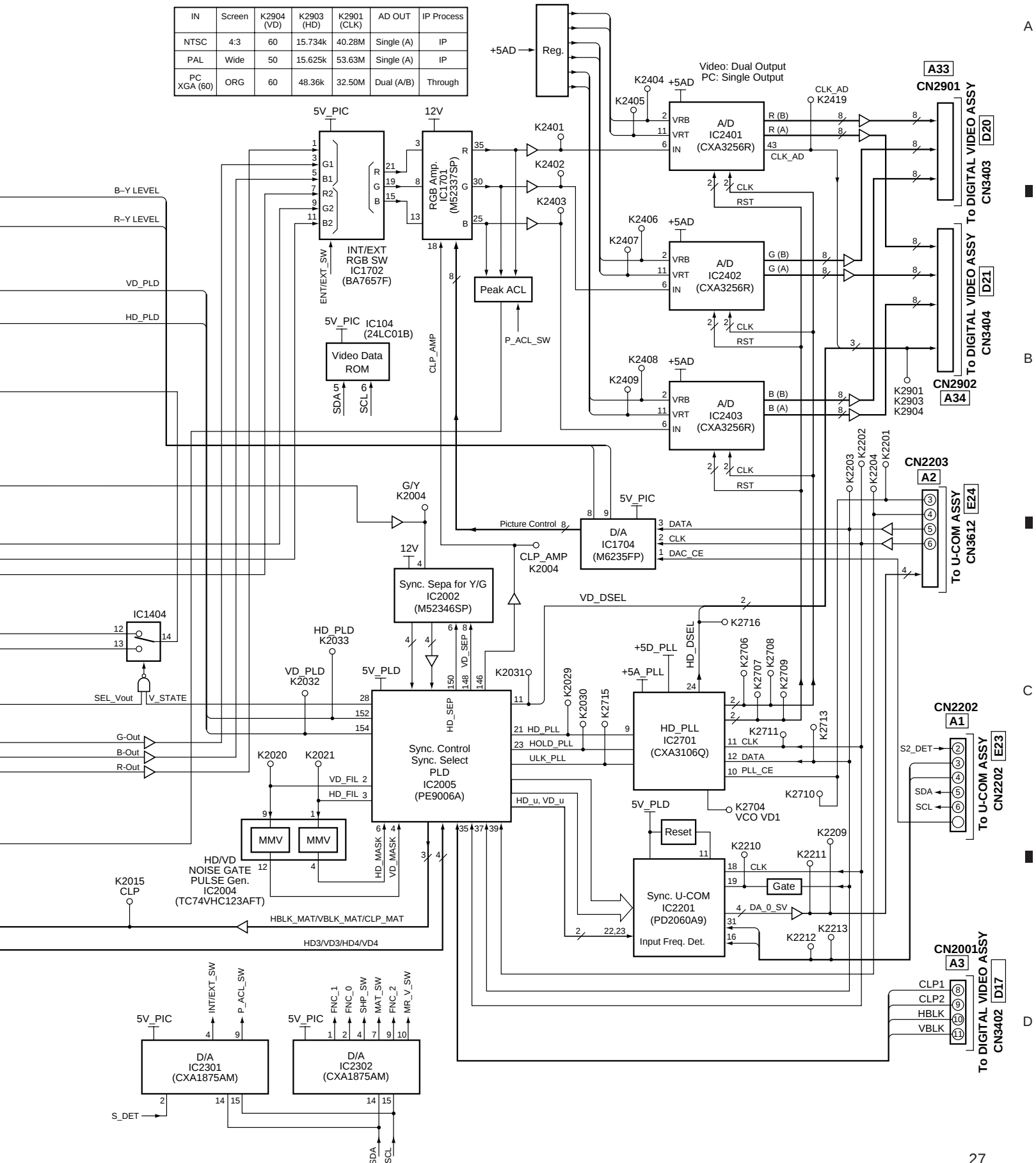
B

C

D



IN	Screen	K2904 (VD)	K2903 (HD)	K2901 (CLK)	AD OUT	IP Process
NTSC	4:3	60	15.734k	40.28M	Single (A)	IP
PAL	Wide	50	15.625k	53.63M	Single (A)	IP
PC XGA (60)	ORG	60	48.36k	32.50M	Dual (A/B)	Through



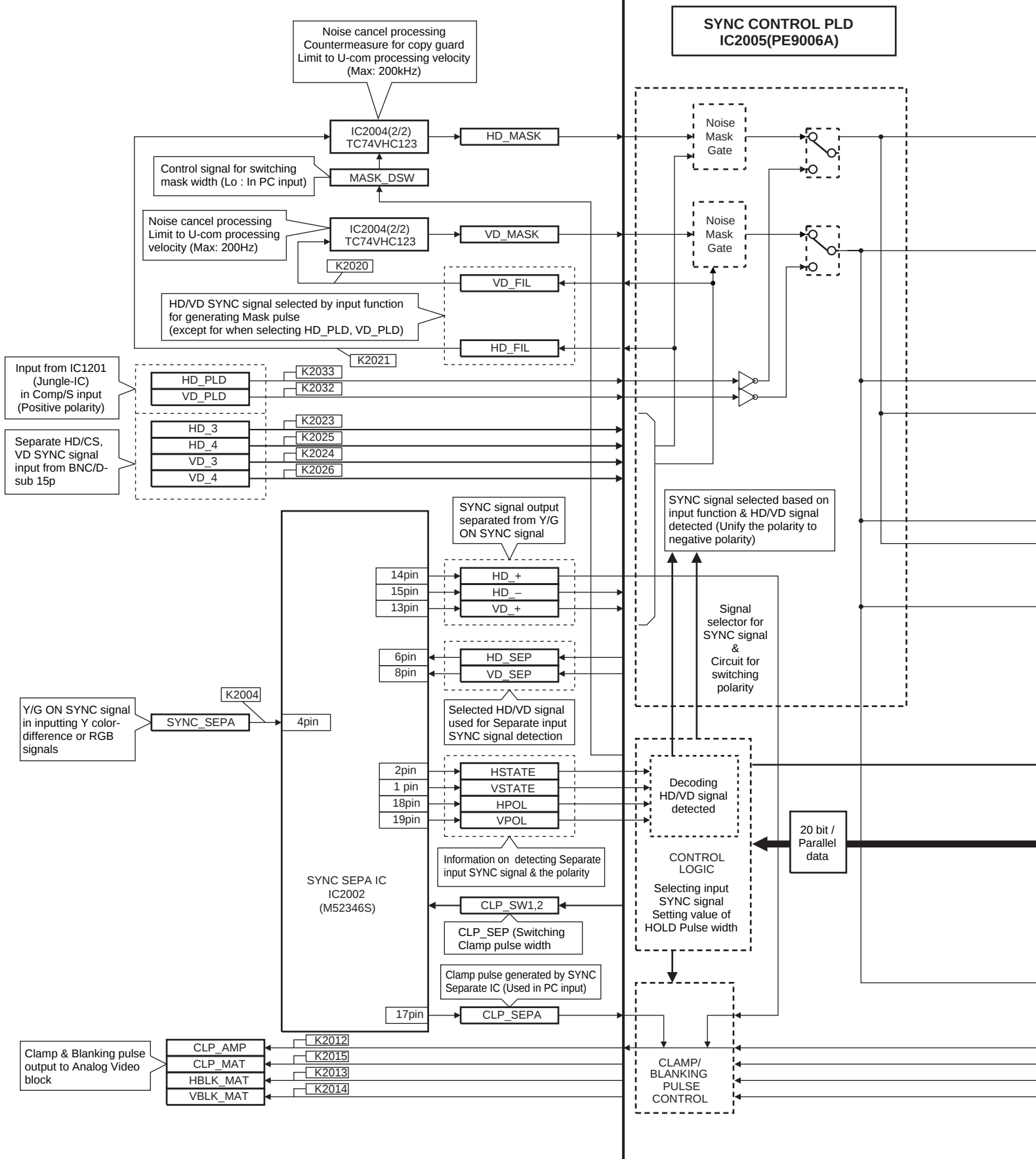
3.3.3 SYNC SIGNAL PROCESSING BLOCK

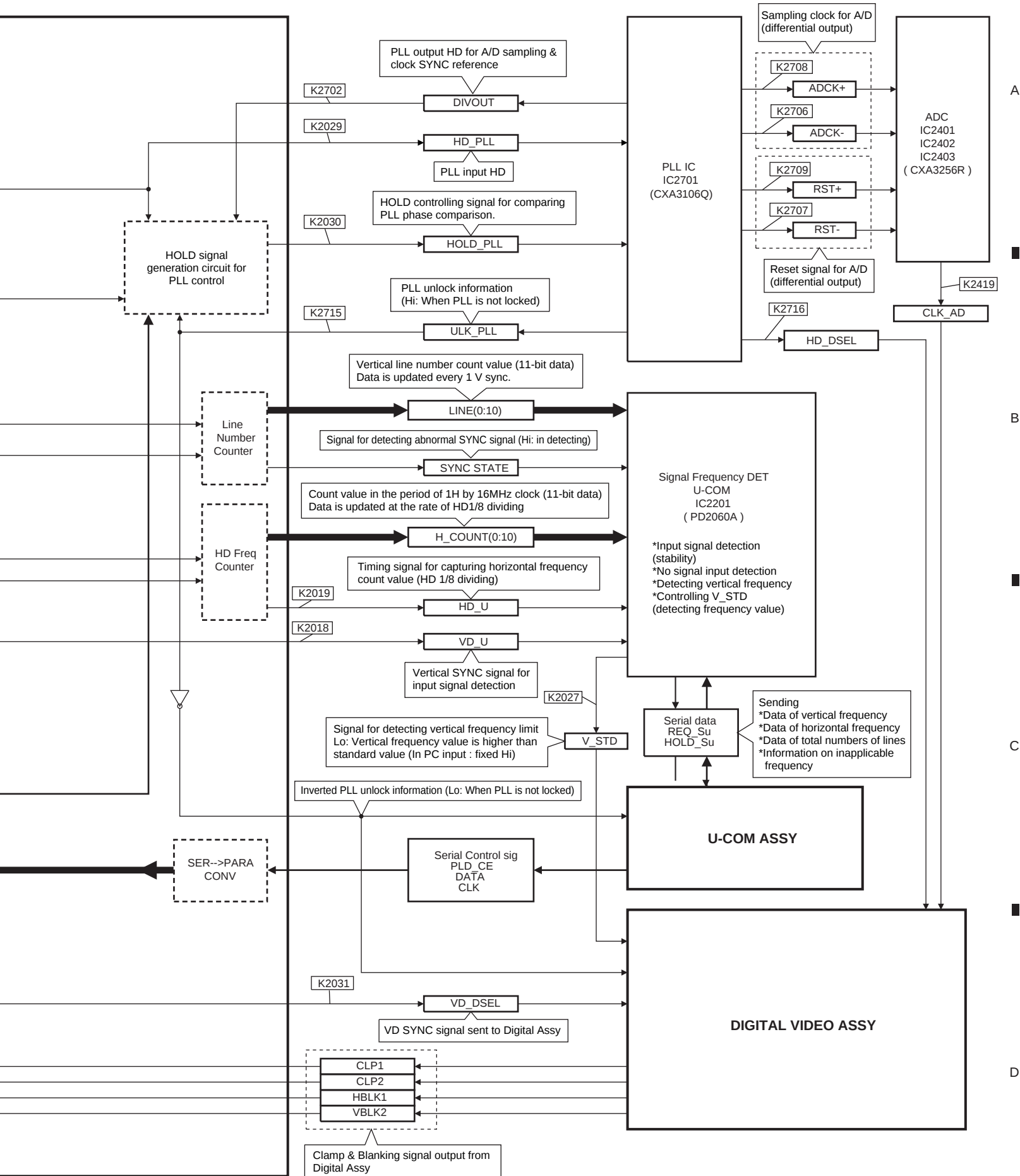
A

B

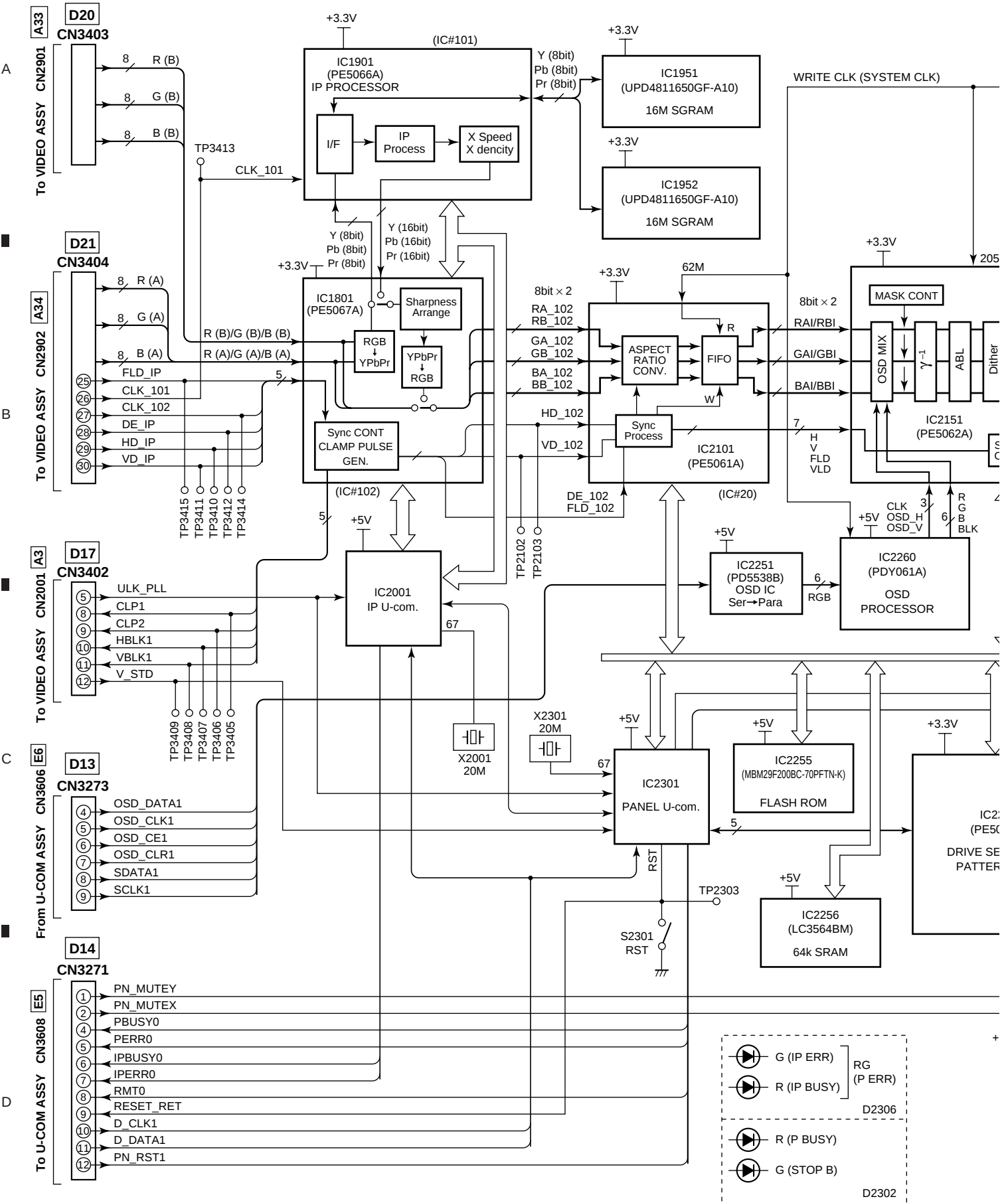
C

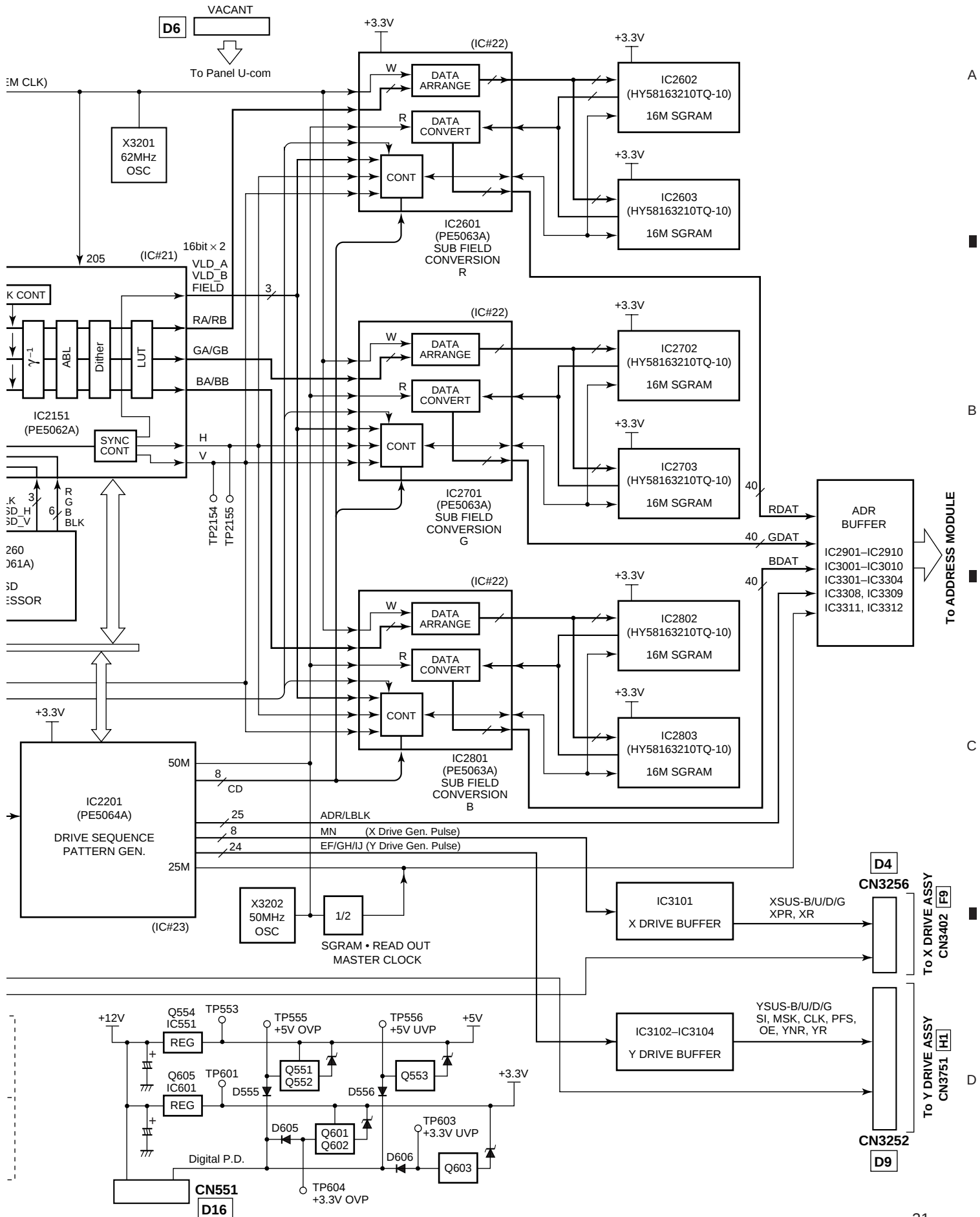
D



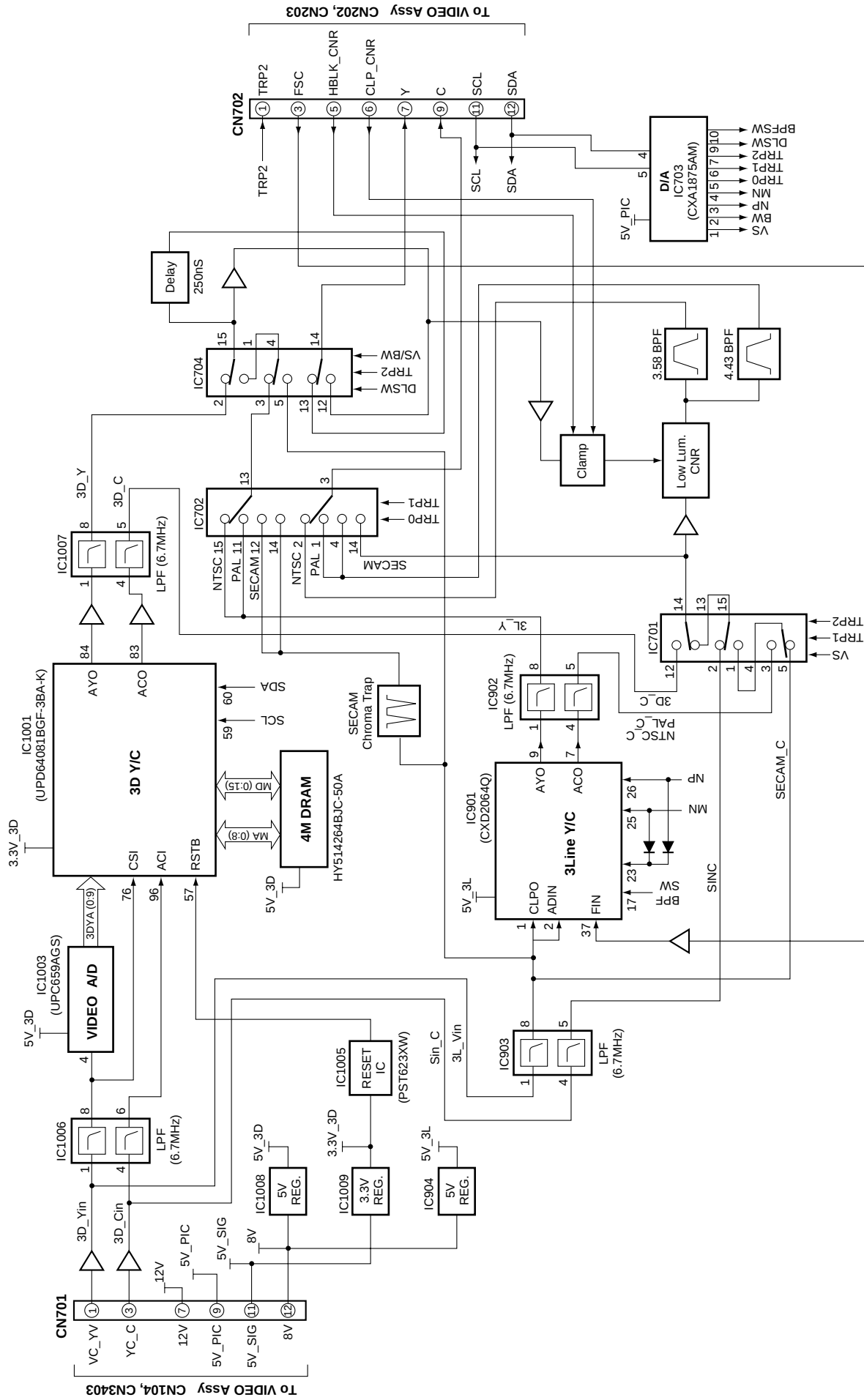


3.3.4 DIGITAL VIDEO ASSY SECTION

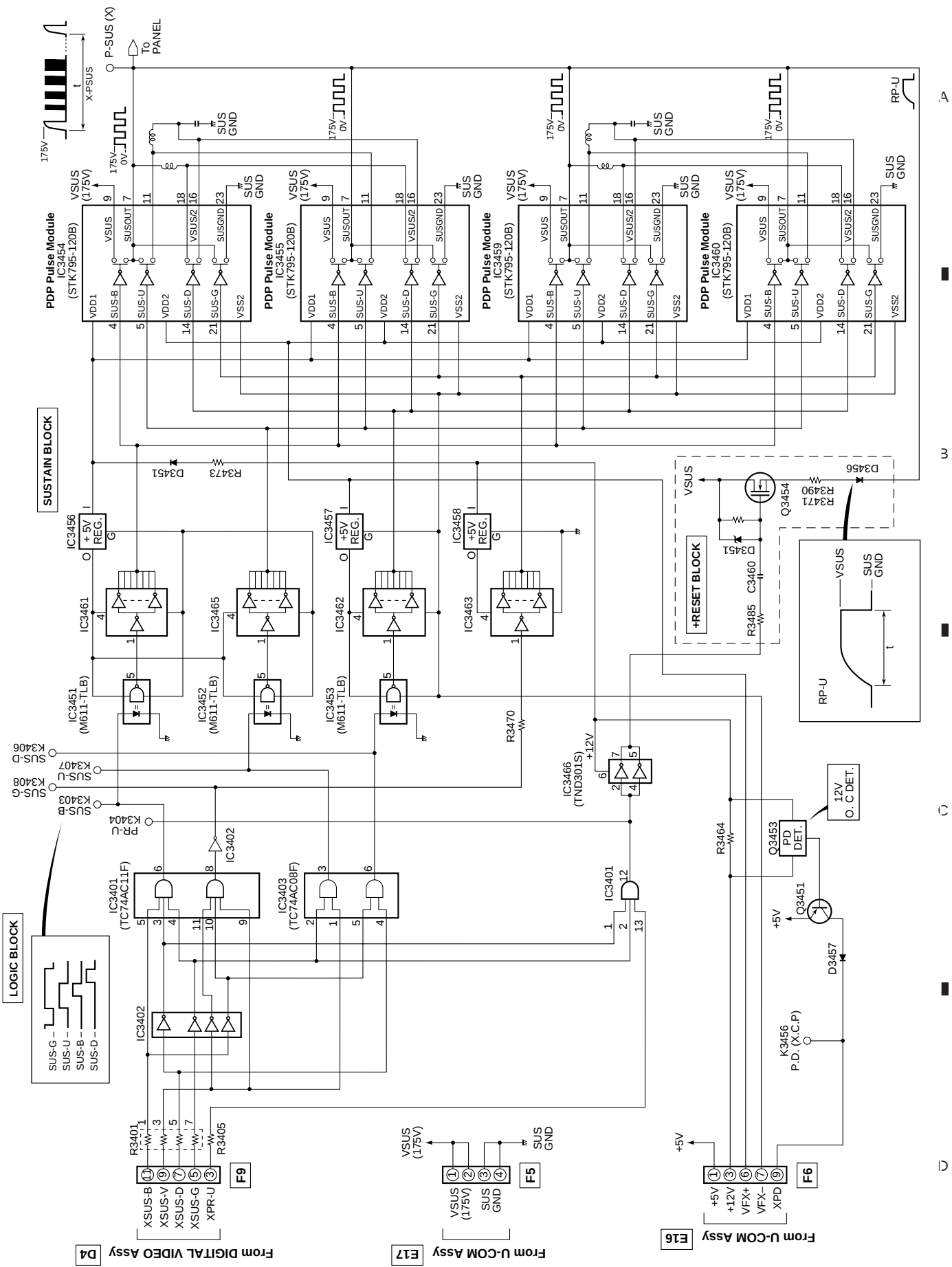




3.3.5 YC SEPA. ASSY SECTION (PDP-502MX Only)



3.3.6 X DRIVE ASSY SECTION



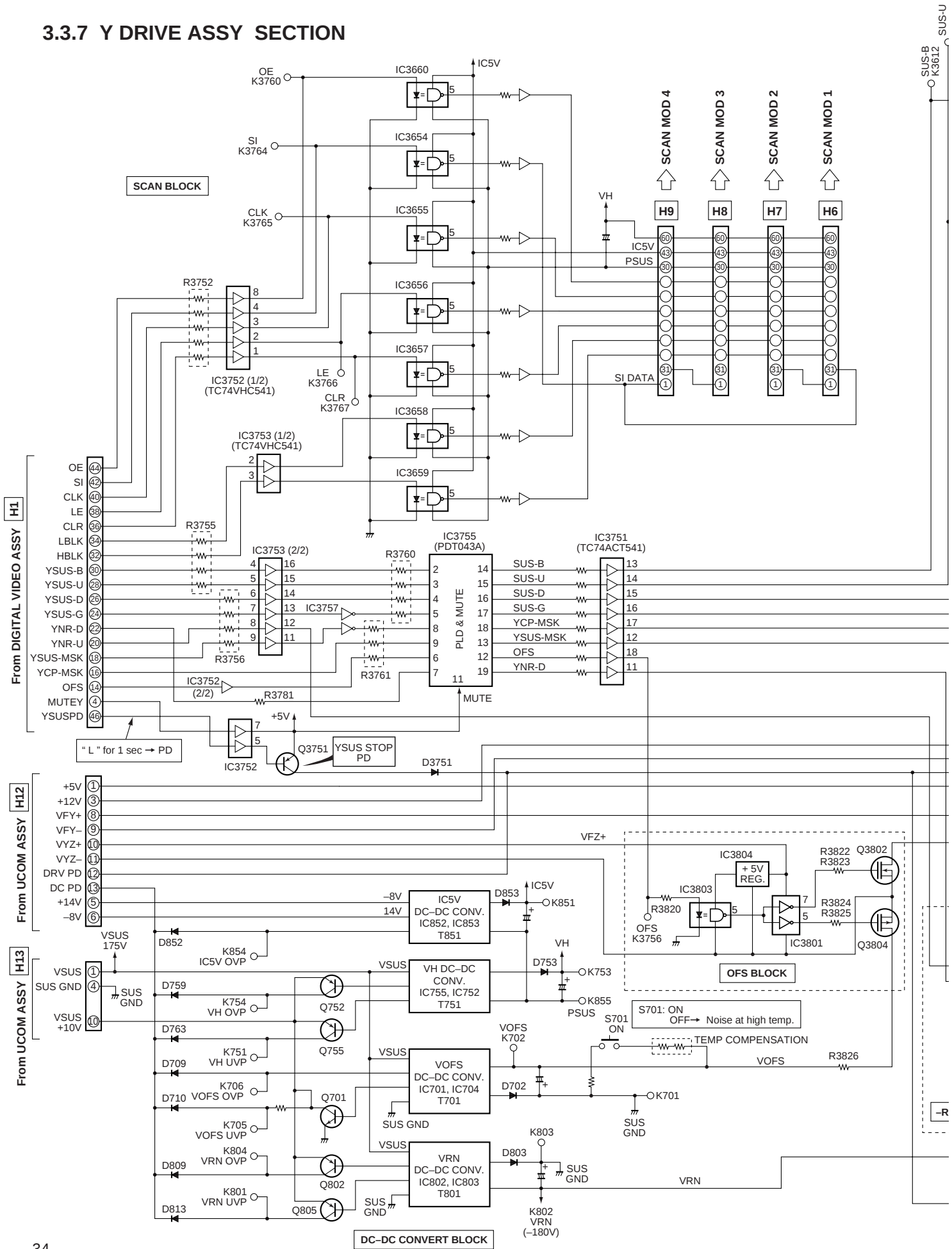
3.3.7 Y DRIVE ASSY SECTION

A

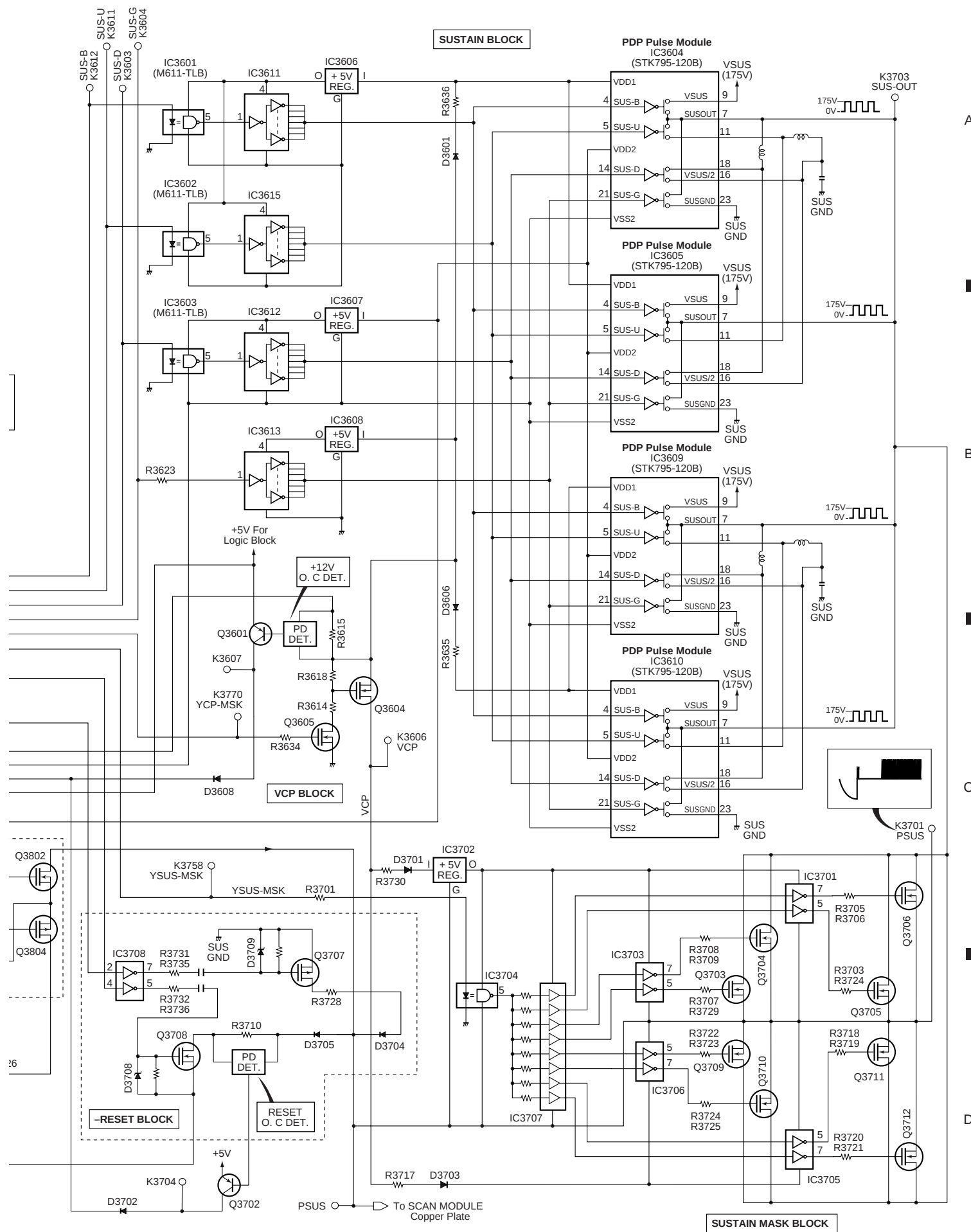
B

C

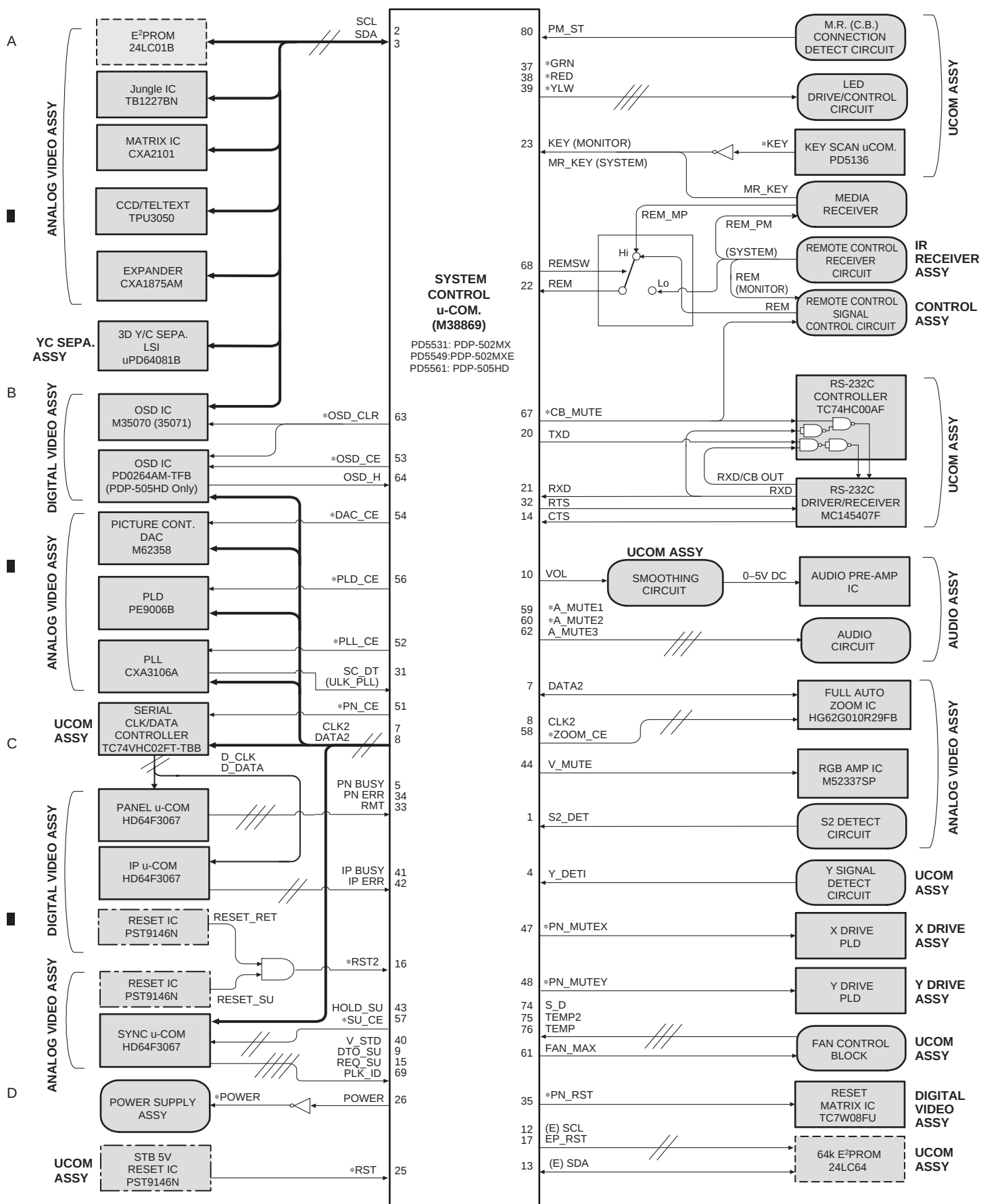
D



PDP-502MX, PDP-502MXE



3.3.8 UCOM ASSY SECTION



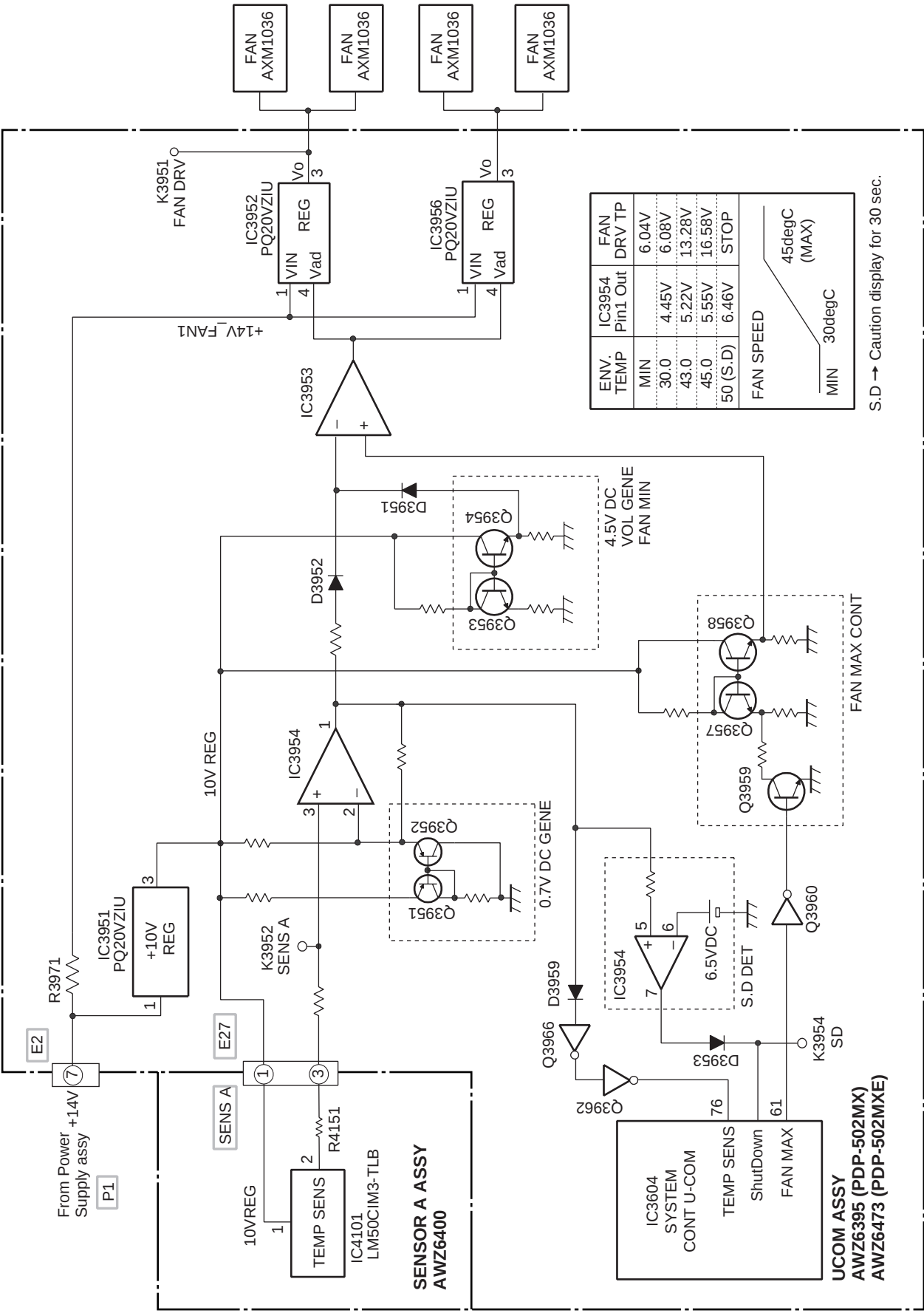
● Pin Function

Pin No.	Name	Function	Operation of Terminals (during power on)	I/O	PDP-502MX	PDP-502MXE	PDP-505HD
1	S2_DET	S2 Signal detection	0–1.3V: Normal, 1.4–2.4V: Letter Box, 2.5–5V: Squeeze	I	○	—	○
	OPTION	Option Video Box detection	High: non existence, Low: existence of Video Box	I	—	○	—
2	SCL	I ² C-BUS Clock	0–5V clock signal: always communicating when power on	O	○	○	○
3	SDA	I ² C-BUS Data	0–5V clock signal: always communicating when power on	I/O	○	○	○
4	V_DET1	Result of Y signal detection	High: Y Signal detected, Low: Y Signal not detected	I	○	○	○
5	PN_BUSY	BUSY signal from Panel U-Com	High: In exchanging input functions, Low: Normal	I	○	○	○
6	—	No allocation(not used)					
7	CLK2	Clock output for Serial 3 lines	0–5V clock signal: always communicating when power on	O	○	○	○
8	DATA2	Data output for Serial 3 lines	0–5V serial signal: always communicating when power on (both-way communication with Full Auto Zoom IC)	O	○	○	○
9	DTO_SU	Serial data input from SYNC u-com	High: Normal, 0–5V serial signal: During communication	I	○	○	○
10	VOL	Audio volume output	PWM output	O	○	○	—
11	—	No allocation (not used)					
12	(E) SCL	I ² C-BUS Clock for E ² PROM	High: Normal, 0–5V clock signal: During communication	I/O	○	○	○
13	(E) SDA	I ² C-BUS Data for E ² PROM	High: Normal, 0–5V serial signal: During communication	I/O	○	○	○
14	CTS	Not used					
15	REQ_SU	Request to read detected frequency from SYNC u-com	High: Normal, Low: In requesting	I	○	○	○
16	*RST2	Reset Signal from SYNC u-com & Digital Video Assy	High: Normal, Low: In resetting	I	○	○	○
17	EP_RST	Reset output to E ² PROM	High: In resetting, Low: Normal	O	○	○	○
18	BUSY2	Not used					
19	SCL2	Not used					
20	TXD	RS-232C sending data	0–5V serial signal	O	○	○	○
21	RXD	RS-232C receiving data	0–5V serial signal	I	○	○	○
22	REM	Remote Control unit signal input	High: Normal, 0–5V serial signal: In input from Remote Control unit	I	○	○	○
23	KEY	Key Matrix, Key of the unit input	High: Normal, 0–5V serial signal: In Key input	I	○	○	○
24	CNVSS	Controlling operation mode of u-com of the unit	Low: Normal	I	○	○	○
25	*RST	Reset input	High: Normal, Low: In Reset	I	○	○	○
26	POWER	Power on/off	High: When power on, Low: In Stand-by	O	○	○	○
27	—	No allocation (not used)					
28	X_IN	Clock input	10 MHz sine wave	I	○	○	○
29	X_OUT	Clock output	10 MHz sine wave	O	○	○	○
30	VSS	Power supply terminal	STB GND	I	○	○	○
31	SC_DT (ULK_PLL)	Detecting SYNC Signal output from Analog Assy to Digital Assy	High: existence of Sync signal, Low: non existence	I	○	○	○
32	RTS	Not used					
33	RMT	Signal of request to quit sending commands from Panel u-com	Low: Normal	I	○	○	○
34	PN_ERR	Communication error signal from Panel u-com	Low: Normal	I	○	○	○
35	*PN_RST	Reset signal output to Panel u-com & IP u-com	High: Normal, Low: In Reset	O	○	○	○
36	—	No allocation (not used)					
37	*GRN	Green LED lighting	Low: In lighting Green LED	O	○	○	○
38	*RED	Red LED lighting	Low: In lighting Red LED	O	○	○	○

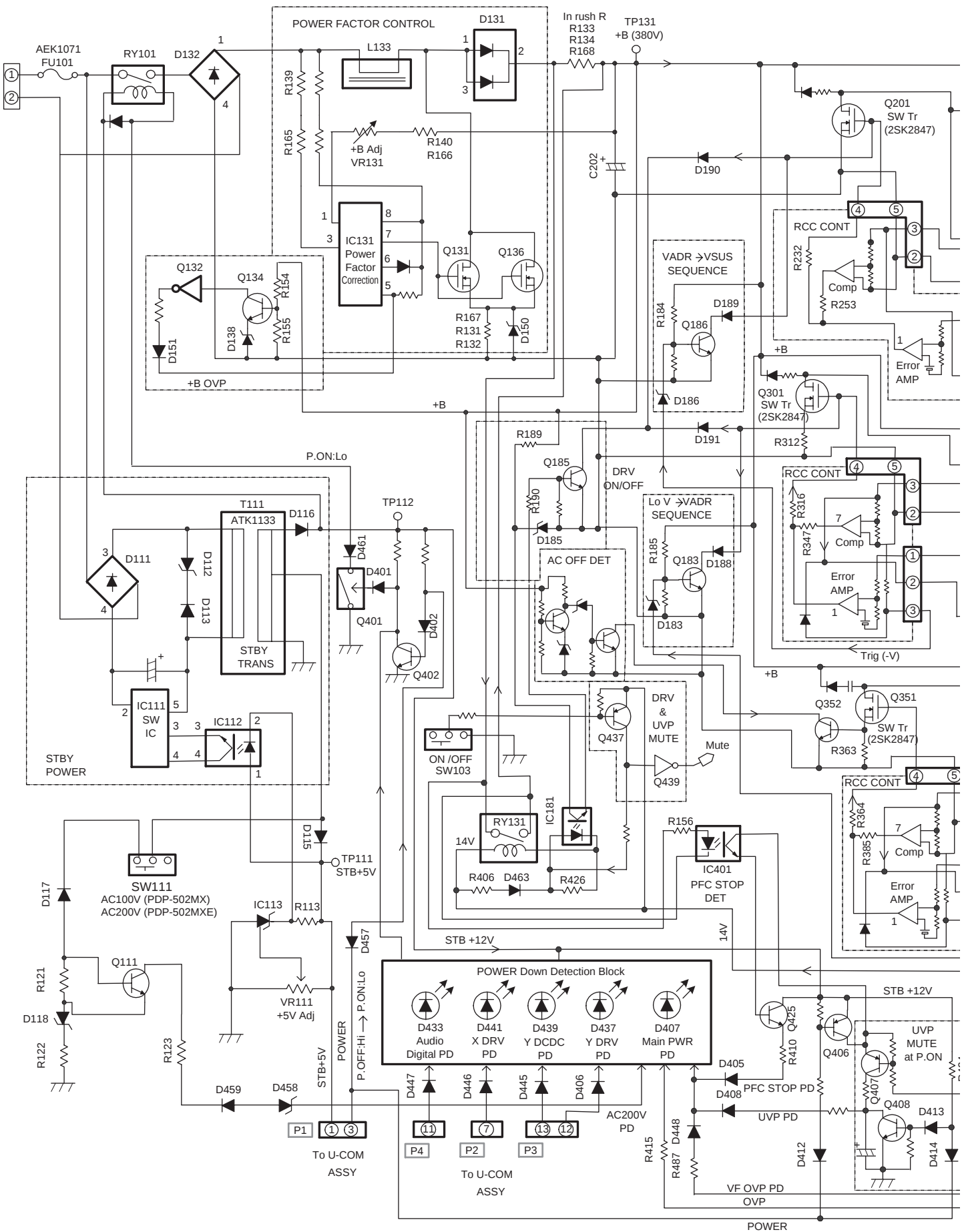
PDP-502MX, PDP-502MXE

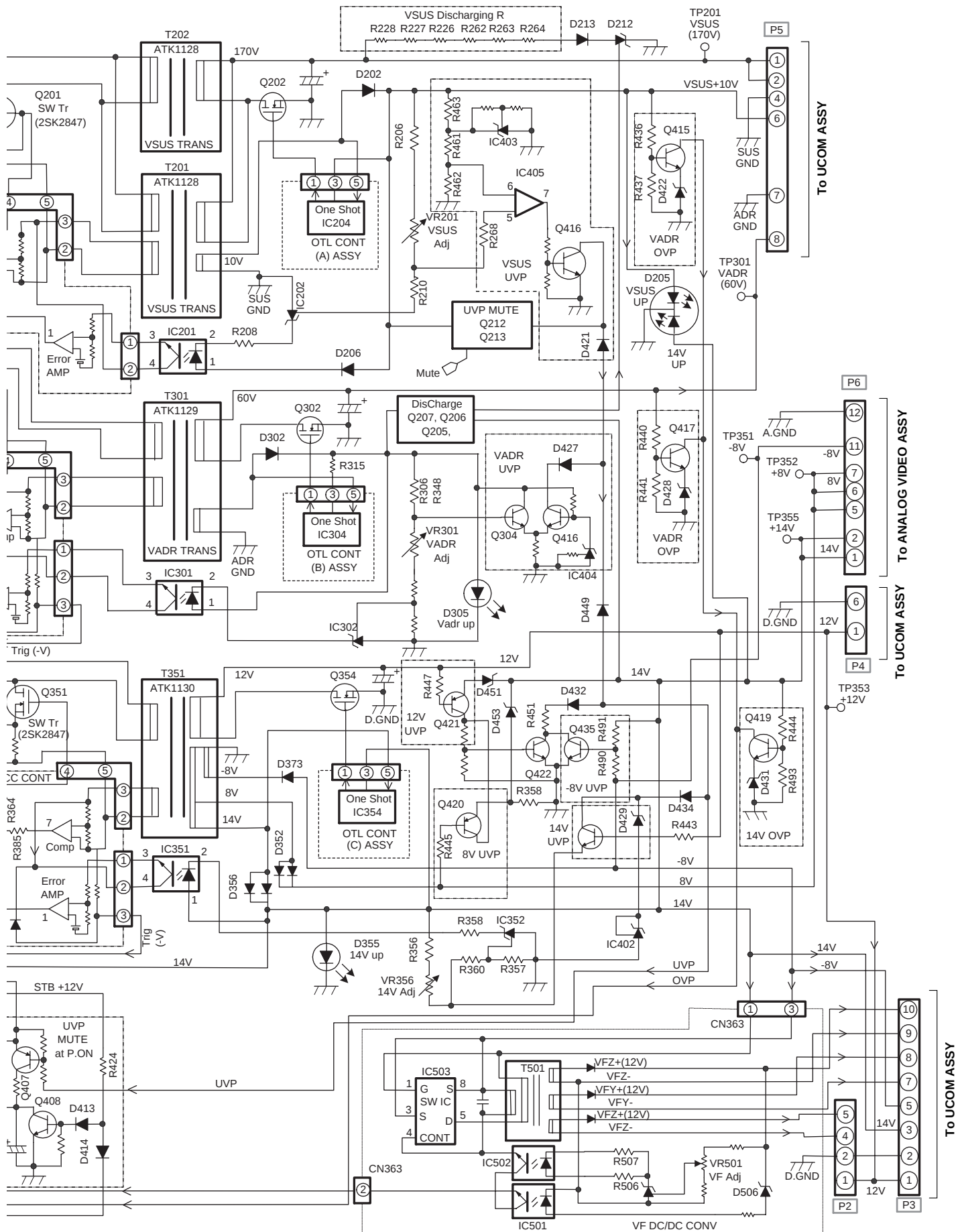
Pin No.	Name	Function	Operation of Terminals (during power on)	I/O	PDP-502MX	PDP-502MXE	PDP-505HD
39	*YLW	Yellow LED lighting	Low: In lighting Yellow LED	O	○	○	○
40	*V_STD	Not used					
41	IP_BUSY	BUSY signal from IP u-com	High: At the timing of VD SYNC	I	○	○	○
42	IP_ERR	Communication error signal from IP u-com	Low: Normal	I	○	○	○
43	HOLD_SU	Command to hold detected frequency value to SYNC u-com	Low: Normal	O	○	○	○
44	V_MUTE	Analog video mute output	High: When muting, Low: Normal	O	○	○	○
45	ZOOM_CLK	Not used					
46	ZOOM_DATA	Not used					
47	*PN_MUTEX	X Drive Panel mute output	High: Normal, Low: When muting	O	○	○	○
48	*PN_MUTEY	Y Drive Panel mute output	Fixed "High"	O	○	○	○
49	*V_STDO	Not used					
50	STDSW	Not used					
51	*PN_CE	Chip Enable for Panel u-com & IP u-com	High: Normal, Low: During communication	O	○	○	○
52	*PLL_CE	Chip Enable for PLL IC	High: Normal, Low: During communication (Approx.80ms interval)	O	○	○	○
53	*OSD_CE	Chip Enable for OSD IC	High: Normal, Low: During communication	O	—	—	○
54	*DAC_CE	Chip Enable for DAC	High: Normal, Low: During communication (Approx.20ms interval)	O	○	○	○
55	PGM_OE	Not used					
56	*PLD_CE	Chip Enable for PLD (Analog Video Assy)	High: Normal, Low: During communication (Approx.80ms interval)	O	○	○	○
57	*SU_CE	Chip Enable for SYNC u-com	High: Normal, Low: During communication	O	○	○	○
58	*ZOOM_CE	Chip Enable for Full Auto Zoom IC	High: Normal, Low: During communication	O	—	—	○
59	*A_MUTE1	Audio Mute 1	High: Normal, Low: When muting	O	○	○	—
60	*A_MUTE2	Audio Mute 2 Muting audio out	High: Normal, Low: When muting	O	○	○	—
61	FAN_MAX	Command to rotate Fan with max. speed	High: In setting Fan max. speed, Low: Normal	O	○	○	○
62	A_MUTE3	Audio Mute 3 Mute in suspending	High: When muting, Low: Normal	O	○	○	—
63	*OSD_CLR	Reset signal output to OSD IC	High: Normal, Low: In resetting	O	○	○	—
64	OSD_H	OSD Timing Pulse for SYNC processing	Pulse input	I	—	—	○
65	—	No allocation (Not used)					
66	DRV_OFF	Not used					
67	*CB_MUTE	Combination Mute	High: When ID is set, Low: Normal	O	○	○	—
68	REMSW	Not used					
69	PLK_ID	Not used					
70	—	No allocation (not used)					
71	VCC	Power source input	STB +5V	I	○	○	○
72	VREF	Reference voltage input of AD/DA Converters	STB +5V	I	○	○	○
73	AVSS	Analog power input of AD/DA Converters	STBGND	I	○	○	○
74	S_D	Shut down detection for high temperature	High: In high temperature, Low: Normal	I	○	○	○
75	TEMP2	Not used					
76	TEMP	Temperature detection for On screen bar display	0–5V DC value	I	○	○	○
77	—	No allocation (Not used)					
78	—	No allocation (Not used)					
79	—	No allocation (Not used)					
80	PM_ST	Not used					

3.3.9 FAN CONTROL SECTION



3.3.10 MAIN POWER ASSY SECTION

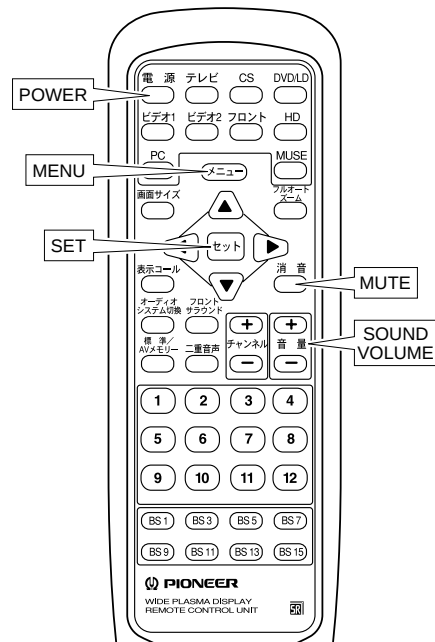




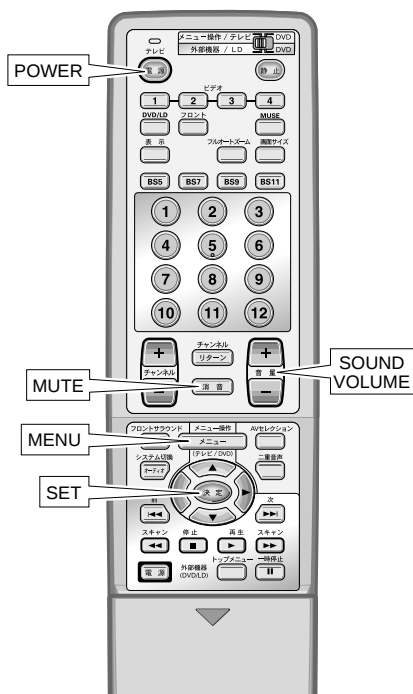
6. ADJUSTMENT

■ SERVICE FACTORY MODE

Perform the operations of Service factory mode using the remote control unit provided with the PDP-501HD (CU-PD001: AXD1432) or the remote control unit provided with the PDP-502HD (CU-PDP009: AXD1673).

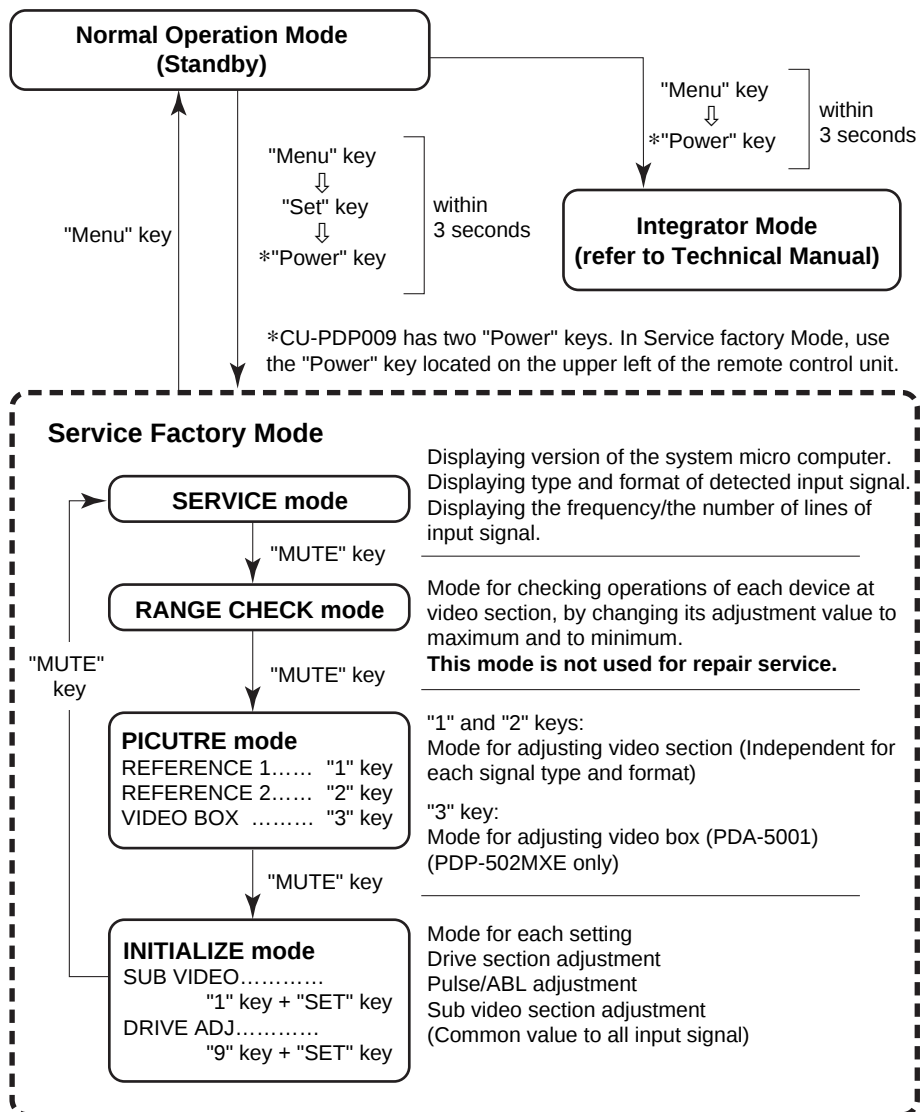


CU-PDP001
(AXD1432)



CU-PDP009
(AXD1673)

■ Entering Service Factory Mode

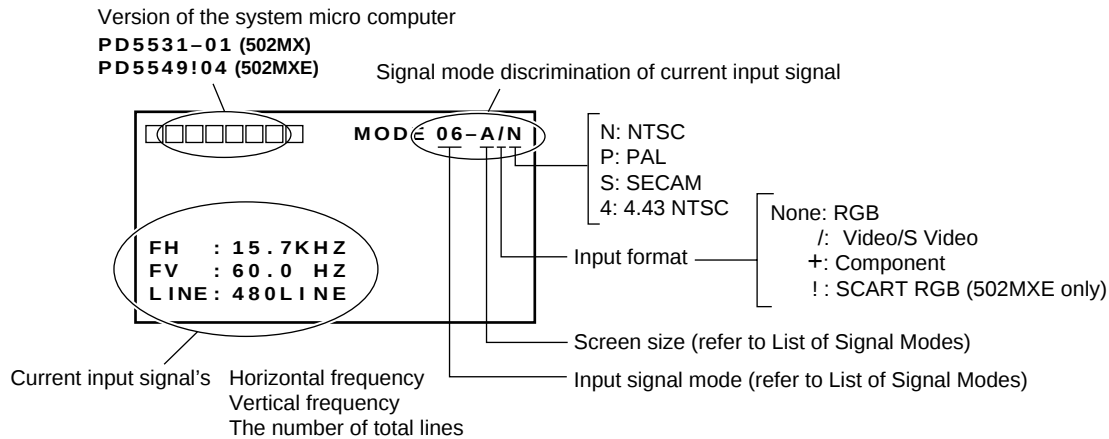


- In each adjustment mode, adjusted values can be changed with +/- of "SOUND VOLUME" key on the remote control unit.
- After adjustment, adjusted values can be fixed by pressing "SET" key.

Note)

- When an input signal mode is changed, the adjustment mode is set to Normal operation mode automatically.
- SETTING (PC/VIDEO) and SIGNAL (RGB/COMPONENT) can not be changed in the service factory mode.
- When entering Service factory mode, all items of PICTURE adjustment in Normal menu/Integrator mode and all items of SCREEN menu (such as position adj.), except for CLK Phase, are reset to their initial value.

SERVICE MODE



List of Signal Modes

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (Hz)	Input Signal Dot * Line	Signal Mode		Panel Display Dot * Line	OSD	Remarks
			PC	VIDEO			
50.0	15.625K	PAL SECAM PAL-N (502MX only) NTSC-50 SCART RGB (50Hz) (502MXE only)	—	01-6	984 * 768	4:3 NORMAL	01-6 – 01-A : RGB
			—	01-7	1280 * 768	FULL	01-6+ – 01-A+: Y color-difference
			—	01-8	↑	ZOOM	06-6/ – 06-A/: Video/S Video
			—	01-9	↑	CINEMA WIDE	01-6! – 01-A!: SCART RGB (502MXE only)
			—	01-A	↑	NATURAL WIDE	
	31.3K	Double-speed PAL	—	02-6	984 * 768	4:3 NORMAL	02-6 – 02-A: RGB
			—	02-7	1280 * 768	FULL	02-6+ – 02-A+: Y color-difference
			—	02-8	↑	ZOOM	
			—	02-9	↑	CINEMA WIDE	
			—	02-A	↑	NATURAL WIDE	
56.0	24.8K	640 * 400 (PC-98)	03-2	—	1280 * 768	FULL	FULL display only
	35.2K	800 * 600 (SVGA 56Hz)	04-0	—	800 * 600	ORIGINAL	(VESA: 35.156k/56.250)
			04-1	—	1024 * 768	4:3 NORMAL	
			04-2	—	1280 * 768	FULL	
	45.1K	1280 * 768 (WIDE-XGA)	05-2	—	1280 * 768	ORIGINAL	Exclusive video card No 4:3 squeeze display
60.0	15.734K	NTSC 4.43NTSC PAL-M (502MX only) PAL-60 SECAM-60 SCART RGB (60Hz) (502MXE only) SDTV16:9 (704 * 480 i) SDTV 4:3 (704 * 480 i) SDTV 4:3 (640 * 480 i)	—	06-6	984 * 768	4:3 NORMAL	06-6 – 06-A: RGB
			—	06-7	1280 * 768	FULL	06-6+ – 06-A+: Y color-difference
			—	06-8	↑	ZOOM	06-6/ – 06-A/: Video/S Video
			—	06-9	↑	CINEMA WIDE	06-6! – 06-A!: SCART RGB (502MXE only)
			—	06-A	↑	NATURAL WIDE	
	31.5K 32.0K	640 * 480 (VGA) 852 * 480 (WIDE-VGA) 864 * 480 (WIDE-VGA) Double-speed NTSC SDTV16:9 (704 * 480 p) SDTV 4:3 (704 * 480 p) SDTV 4:3 (640 * 480 p)	07-0	—	640 * 480	ORIGINAL	PC setting
			07-1	—	1024 * 768	4:3NORMAL	(VESA: 31.469k/59.940)
			07-2	—	1280 * 768	FULL	
			—	07-6	984 * 768	4:3NORMAL	VIDEO setting
			—	07-7	1280 * 768	FULL	07-6 – 07-A: RGB
			—	07-8	↑	ZOOM	07-6+ – 07-A+: Y color-difference
			—	07-9	↑	CINEMA WIDE	
			—	07-A	↑	NATURAL WIDE	

PDP-502MX, PDP-502MXE

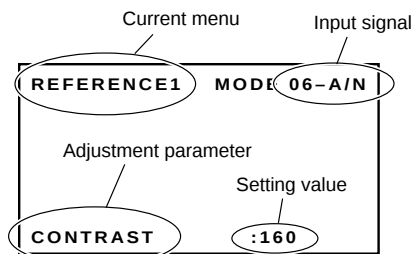
Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (Hz)	Input Signal Dot * Line	Signal Mode		Panel Display Dot * Line	OSD	Remarks
			PC	VIDEO			
60.0	33.8K	Hi-Vision INTERLACE (1035 i) HDTV16:9 (1920 * 1080 i)	—	08-7	1280 * 768	FULL (HD)	08-7+: Y color-difference 08-7: RGB
	37.9K	800 * 600 (SVGA)	0A-0	—	800 * 600	ORIGINAL	(VESA: 37.879k/60.317)
	38.0K	1072 * 600 (WIDE-SVGA)	0A-1	—	1024 * 768	4:3NORMAL	
			0A-2	—	1280 * 768	FULL	
	45.0K	HDTV16:9 (1280 * 720 p)	—	0B-7	1280 * 768	FULL (HD)	0B-7+: Y color-difference 0B-7: RGB
	48.4K	1024 * 768 (XGA)	0C-1	—	1024 * 768	ORIGINAL	(VESA: 48.363k/60.004)
	48.0K	1376 * 768 (WIDE-XGA)	0C-2	—	1280 * 768	FULL	
	53.7K	1152 * 864	0D-1	—	1024 * 768	4:3 (TYPE)	
			0D-2	—	1280 * 768	FULL (TYPE)	
	60.0K	1280 * 960	0E-1	—	1024 * 768	4:3 (TYPE)	(VESA: 60.000k/60.000)
			0E-2	—	1280 * 768	FULL (TYPE)	
	64.0K	1280 * 1024 (SXGA)	0F-1	—	960 * 768	4:3 (TYPE)	(VESA: 63.981k/60.020)
	64.3K		0F-2	—	1280 * 768	FULL (TYPE)	
	64.6K		0F-3	—	1280 * 768	ZOOM	
	67.5K	Hi-Vision PROGRESSIVE (1035 p) HDTV16:9 (1920 * 1080 p)	—	10-7	1280 * 768	FULL (HD)	10-7+: Y color-difference 10-7: RGB
	75.0K	1600 * 1200 (UXGA)	11-1	—	1024 * 768	4:3 (TYPE)	(VESA: 75.000k/60.000)
65.0	81.3K	1600 * 1200 (UXGA)	12-1	—	1024 * 768	4:3 (TYPE)	(VESA: 81.250k/65.000)
66.7	35.0K	640 * 480 (Macintosh 13)	14-0	—	640 * 480	ORIGINAL	
			14-1	—	1024 * 768	4:3 NORMAL	
			14-2	—	1280 * 768	FULL	
	62.0K	1152 * 900 (SUN LO)	13-1	—	1024 * 768	4:3 (TYPE)	Mode for SUN (UNIX)
			13-2	—	1280 * 768	FULL (TYPE)	
70.1	31.5K	640 * 400 (PC-H98)	15-2	—	1280 * 768	FULL	720 * 400 can be displayed (Data amount drops)
	56.5K	1024 * 768 (XGA)	16-1	—	1024 * 768	ORIGINAL	(VESA: 56.476k/70.069)
			16-2	—	1280 * 768	FULL	
	87.5K	1600 * 1200 (UXGA)	17-1	—	1024 * 768	4:3 (TYPE)	(VESA: 87.500k/70.000)
72.0	37.9K	640 * 480 (VGA)	18-0	—	640 * 480	ORIGINAL	(VESA: 37.861k/72.809)
			18-1	—	1024 * 768	4:3 NORMAL	
			18-2	—	1280 * 768	FULL	
	48.1K	800 * 600 (SVGA)	19-0	—	800 * 600	ORIGINAL	(VESA: 48.077k/72.188)
			19-1	—	1024 * 768	4:3 NORMAL	
			19-2	—	1280 * 768	FULL	
	64.9K	1152 * 864	1A-1	—	1024 * 768	4:3 (TYPE)	
			1A-2	—	1280 * 768	FULL (TYPE)	
75.0 (74.6)	37.5K	640 * 480 (VGA)	1C-0	—	640 * 480	ORIGINAL	(VESA:37.500k/75.000)
			1C-1	—	1024 * 768	4:3 NORMAL	
			1C-2	—	1280 * 768	FULL	
	46.9K	800 * 600 (SVGA)	1D-0	—	800 * 600	ORIGINAL	(VESA:46.875k/75.000)
			1D-1	—	1024 * 768	4:3 NORMAL	
			1D-2	—	1280 * 768	FULL	
	49.7K	832 * 624 (Macintosh 16)	1E-0	—	832 * 624	ORIGINAL	4:3/FULL → Top & bottom are masked
			1E-1	—	1024 * 748	4:3 NORMAL	
			1E-2	—	1280 * 748	FULL	

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (Hz)	Input Signal Dot * Line	Signal Mode		Panel Display Dot * Line	OSD	Remarks
			PC	VIDEO			
75.0 (74.9) (75.1) (76.1)	60.0K	1024 * 768 (XGA)	1F-1	—	1024 * 768	ORIGINAL	(VESA: 60.023k/75.029)
	60.2K	1024*768 (Macintosh 19)	1F-2	—	1280 * 768	FULL	74.9/60.2K.....MAC
	67.7K	1152 * 864	20-1	—	1024 * 768	4:3 (TYPE)	(VESA: 67.500k/75.000)
			20-2	—	1280 * 768	FULL (TYPE)	
	68.7K	1152 * 870 (Macintosh 21)	21-1	—	1024 * 768	4:3 (TYPE)	
			21-2	—	1280 * 768	FULL (TYPE)	
	71.7K	1152 * 900 (SUN HI)	2A-1	—	1024 * 768	4:3 (TYPE)	
			2A-2	—	1280 * 768	FULL (TYPE)	
80.0K 81.0K	1280 * 1024 (SXGA) 1600 * 1024 (WIDE-SXGA)	22-1	—	960 * 768	4:3 (TYPE)	(VESA: 79.976k/75.025)	
85.0	43.3K	640 * 480 (VGA)	23-0	—	640 * 480	ORIGINAL	(VESA: 43.269k/85.008)
			23-1	—	1024 * 768	4:3NORMAL	
			23-2	—	1280 * 768	FULL	
	53.7K	800 * 600 (SVGA)	24-0	—	800 * 600	ORIGINAL	(VESA: 53.674k/85.061) 4:3/FULL → Top & bottom are masked
			24-1	—	1024 * 720	4:3NORMAL	
			24-2	—	1280 * 720	FULL	
	68.7K	1024 * 768 (XGA)	25-1	—	1024 * 768	ORIGINAL	(VESA: 68.677k/84.997)
			25-2	—	1280 * 768	FULL	
	91.1K	1280 * 1024 (SXGA)	26-1	—	960 * 768	4:3 (TYPE)	(VESA: 91.146k/85.024)
87.0 INTERLACE	35.5K	1024 * 768 (XGA)	27-1	—	1024 * 768	ORIGINAL (TYPE)	(VESA: 35.522k/43.479 INTERLACED)
			27-2	—	1280 * 768	FULL (TYPE)	
	46.4K	1280 * 1024 (SXGA)	28-2	—	1280 * 768	FULL (TYPE)	

■ Items to adjust and set value in Each Adjustment mode

■ PICUTRE mode

- PICTURE mode has three menus, "REFERENCE 1", "REFERENCE 2" and "VIDEO BOX".
- Press "1" key on the remote control unit to enter "REFERENCE 1", press "2" key on the remote control unit to enter "REFERENCE 2" and press "3" key on the remote control unit to enter "VIDEO BOX". For "VIDEO BOX" mode, refer to the service manual ARP3038 for PDA-5001/ZYVLPK
- Do not operate keys that have no parameters applied to the current input signal mode.



● REFERENCE 1 mode

Adjustment mode independent of input signal format / Data stored in EEPROM of UCOM ASSY

Remote Control Key	Adjustment Parameter	Adjusting & Setting Item	Setting Value												
			C. VIDEO/YC				SCART RGB		COMPONENT			RGB VIDEO			PC
			NTSC	PAL	SECAM	4.43NT	RGB60	RGB50	STD	× 2	HDTV	STD	× 2	HDTV	
1	CONTRAST	Contrast adjustment	Adjustment required												
2	BRIGHT	Brightness adjustment													
3	COLOR	Color adjustment													
4	TINT	Tint adjustment (C.Video signal input only)	Adjustment required												
5	H. SHARP	Horizontal sharpness setting (Video signal input)													
	H. ENHANCE	Horizontal sharpness setting (PC signal input)	—	—	—	—	—	—	—	—	—	—	—	128	
6	DETAIL	Detail setting	128	128	128	128	128	128	128	128	128	128	128	128	
7	R HIGH	White Balance adjustment	Adjustment required												
8	G HIGH														
9	B HIGH														
10	R LOW														
11	G LOW														
12	B LOW														
BS5	V. SHARP	Vertical sharpness setting (Video signal input)	128	140	140	128	128	140	113	128	128	128	128	—	
	V. ENHANCE	Vertical sharpness setting (PC signal input)	—	—	—	—	—	—	—	—	—	—	—	128	
BS9	ABL LEV OFFSET	ABL Level offset adjustment	Adjustment required (note 2)												
BS11	PLS NUM OFFSET	Pulse number offset adjustment	8	8	8	8	8	8	8	8	8	8	8	8	

SCART RGB: PDP-502MXE Only

● REFERENCE 2 mode

Adjustment mode independent of input signal format / Data stored in EEPROM of ANALOG VIDEO ASSY

Remote Control Key	Adjustment Parameter	Adjusting & Setting Item	Setting Value												
			C. VIDEO/YC				SCART RGB		COMPONENT			RGB VIDEO			PC
			NTSC	PAL	SECAM	4.43NT	RGB60	RGB50	STD	× 2	HDTV	STD	× 2	HDTV	
1	R-Y/R	Matrix demodulation angle setting (Video signal input only)	6(10)	11(13)	3(13)	6(10)	10	13	6	6	6	6	6	6	—
2	R-Y/B		12(15)	14(15)	11(15)	12(15)	15	15	12	12	12	12	12	12	—
3	G-Y/R		10	9(10)	14(10)	10	10	10	10	10	10	10	10	10	—
4	G-Y/B		5	6(4)	9(4)	5	5	4	5	5	5	5	5	5	—
9	ENHANCER MAIN	Sharpness setting	8(0)	5(0)	5(0)	5(0)	0	0	0	0	5	5(0)	5(0)	5	—
10	ENHANCER V		10(0)	10(0)	10(0)	10(0)	0	0	0	0	10	10(0)	10(0)	10	—
11	ENHANCER M		3(0)	2(0)	2(0)	2(0)	0	0	0	0	2	2(0)	2(0)	2	—
12	ENHANCER H		5(0)	3(0)	3(0)	3(0)	0	0	0	0	3	3(0)	3(0)	3	—
BS5	R-Y LEVEL	Color-difference adjustment (INPUT 1, 2 only)(502MX only)	Adjustment required				—	—	—	—	—	—	—	—	—
BS7	B-Y LEVEL						—	—	—	—	—	—	—	—	—
BS9	Y DELAY	Y delay setting (INPUT 1, 2 only)(502MX only)	1	0	3	4	—	—	—	—	—	—	—	—	—
BS11	CTI LEVEL	Color transient setting (INPUT 1, 2 only)	1(2)	2	2	2	2	2	—	—	—	—	—	—	—

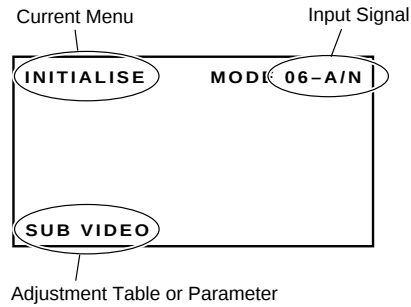
SCART RGB: PDP-502MXE Only, (): PDP-502MXE

Note 1) For Parameter , adjustment values are fixed.

Note 2) If unnecessarily adjusted, power consumption of the unit is changed and the panel is damaged.

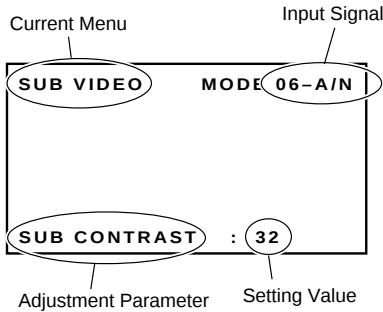
Adjust only in case of necessity.

■ INITIALIZE mode (Common for all input signal types and formats)



Remote Control Key	Adjustment Parameter	Adjusting & Setting Item	Setting Value
1	SUB VIDEO	Go to SUB VIDEO adjustment menu with "SET" key	—
2	MIRROR MODE (502MX only)	Setting Mirror mode OFF → X XY ← Y	OFF
3	FULL MASK	Setting Full mask display OFF ↔ ON	OFF
4	COLOR DETECT (502MX only)	Setting Color detecting EURO ALL ← SA	EURO mode
5	HOURL METER (502MX only)	Displaying operation hour meter	—
6	BAUD RATE (502MX only)	Setting Baud rate 1200 → 2400 19200 ←	4800
7	EEPROM INIT.	Initializing EEPROM (Do not use)	—
8	MASK CONTROL	Setting Original /4:3 displaying area motion mode. OFF ↔ ON	ON
9	DRIVE ADJ	Go to DRIVE adjustment menu with "SET" key	—
11	INTE. MODE	Setting Integrator mode lock/ free LOCK ON ← FREE	ON
BS5	FINAL SET UP	Setting to default factory setting with "SET" key (refer to Details of FINAL SETUP)	—

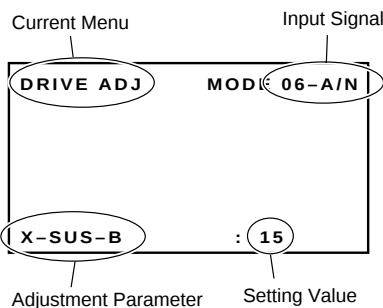
● SUB VIDEO mode (Common for all input signal types and formats)



Remote Control Key	Adjustment Parameter	Adjusting & Setting Item	Setting Value
1	SUB CONTRAST	Sub Contrast adjustment (except for PC)	Adjustment required
2	SUB BRIGHT	Sub Brightness adjustment (except for PC)	Adjustment required
3	SUB TINT (502MX only)	Sub Tint setting (except for PC)	64
8	PULSE NUMBER (502MX only)	Base pulse number adjustment (note)	8
9	ABL LEVEL (502MX only)	ABL Level value adjustment (note)	128
BS5	ACL SW	ACL setting OFF ↔ ON	ON
BS11	D RANGE SW	Dynamic Range setting OFF ↔ ON	OFF

Note) If unnecessarily adjusted, power consumption of the unit is changed and the panel is damaged. Adjust only in case of necessity.

● DRIVE ADJ mode (Common for all input signal types and formats)



Remote Control Key	Adjustment Parameter	Adjusting & Setting Item	Setting Value
1	X-SUS-B	Sustain Drive Pulse adjustment	Adjustment required
2	X-SUS-G		8
3	Y-SUS-B		Adjustment required
4	Y-SUS-G		8
10	R SIDE LEVEL	Side Mask color/level setting	100
11	G SIDE LEVEL		97
12	B SIDE LEVEL		100
BS5	R FULL LEVEL	Full Mask color/level setting	255
BS7	G FULL LEVEL		255
BS9	B FULL LEVEL		255

■ Details of FINAL SETUP (Factory default setting)

Item		Default Setting	Remarks
Power(STAND-BY/ON)		STANDBY	
Input function		INPUT1 (502MX), INPUT3 (502MXE)	
Displaying size		NATURAL WIDE	(On video signal input) For each input function
		(PC ①) ORIGINAL (including TYPE)	(On PC signal input) For INPUT 3, 4 ∩ each signal mode The priority order is ① → ② → ③
		(PC ②) 4: 3NORMAL (including TYPE)	
		(PC ③) FULL (including TYPE)	
V. POSITION		0	(On video signal input) For each input function
		0	(On "mode0F-3" input) For each INPUT 3, 4
KEYLOCK		UNLOCK	Common for all input functions
VOLUME		0	Common for all input functions
MUTING		OFF	Common for all input functions
PICTURE		Center value for all adjustment items	For each input function ∩ each signal mode
SCREEN		Center value for all adjustment items	For each input function ∩ each signal mode
POWER SAVE	(VIDEO)	OFF	(On video signal input) Common for all input functions
	(PC)	OFF	(On PC signal input) Common for INPUT 3, 4
COLOR SYSTEM		AUTO	For each INPUT 1, 2
3D Y/C MODE (502MX only)		MOTION	For only INPUT 1
SETTING/SIGNAL		PC/RGB	For each INPUT 3, 4
CLAMP		MODE1	(On RGB signal input) For each INPUT 3, 4
HIGH CONTRAST		OFF	(On video signal input) Common for all input functions
ABL		ON	(On PC signal input) For each INPUT 3, 4
H. ENHANCE		Center value	(On PC signal input) For each INPUT 3, 4
V. ENHANCE		Center value	(On PC signal input) For each INPUT 3, 4
PICTURE		Adjustment values for all adjustment items	Memory cleared for PC For each input function ∩ each signal mode
WHITE BALANCE		Adjustment values for all adjustment items	Memory cleared for PC For each input function ∩ each signal mode
SCREEN		Center value for all adjustment items	For each input function ∩ each signal mode
SIDE MASK	R LEVEL	100	Common for all input functions
	G LEVEL	97	
	B LEVEL	100	
COLOR MODE		1	Common for all input functions
MIRROR MODE		OFF	Common for all input functions
BRIGHT ENHANCE	(VIDEO)	OFF	(On video signal input) Common for all input functions
	(PC)	OFF	(On PC signal input) Common for INPUT 3,4
OSD		ON	Common for all input functions
BAUD RATE		4800BPS	Common for all input functions
FAN CONTROL		AUTO	Common for all input functions
HOUR METER		0	Operation hour
SUB VOLUME	INPUT1	63	Independent sound volume for each input function
	INPUT2	63	
	INPUT3	63	
	INPUT4	63	
FULL MASK		OFF	
COLOR DETECT (502MX only)		EURO	
MASK CONTROL		ON	
INTE. MODE		ON	Integrator mode operable.
ID No.		-- (Not given)	Only commands with ID:** operable

■ Adjustments required when the set is repaired or replaced

■ VIDEO ASSY

● When repaired

- 1) (Procedure 1) Color difference (R-Y/B-Y) adjustment (502MX only)
- 2) (Procedure 2) Sub-Contrast/Sub-Bright adjustment
- 3) (Procedure 9) White balance adjustment

● When replaced

- 3) (Procedure 9) White balance adjustment

■ MAIN POWER ASSY

● When repaired

- 1) (Procedure 3) VSUS/VADR/STB5V/+14V voltage adjustment
- 2) (Procedure 4) VSUS UVP/+B voltage adjustment
- 3) (Procedure 5) VFZ voltage adjustment

● When replaced

- 1) (Procedure 3) VSUS voltage adjustment
(Adjust the voltage to the voltage value mentioned on the "Drive voltage label")

Caution: Setting of SW, S111 at MAIN POWER ASSY

PDP-502MXE Only: Set the SW, S111 to AC220V side.
Otherwise the power will shutdown.
PDP-502MX/505HD: Set the SW, S111 to AC100V side.

■ DIGITAL VIDEO ASSY

● When replaced

- 1) (Procedure 6) 5V/3.3V voltage adjustment

● When replaced

No adjustment required.

■ Y DRIVE ASSY

● When repaired

- 1) (Procedure 7) VOFS/VH/VRN/IC5V voltage adjustment

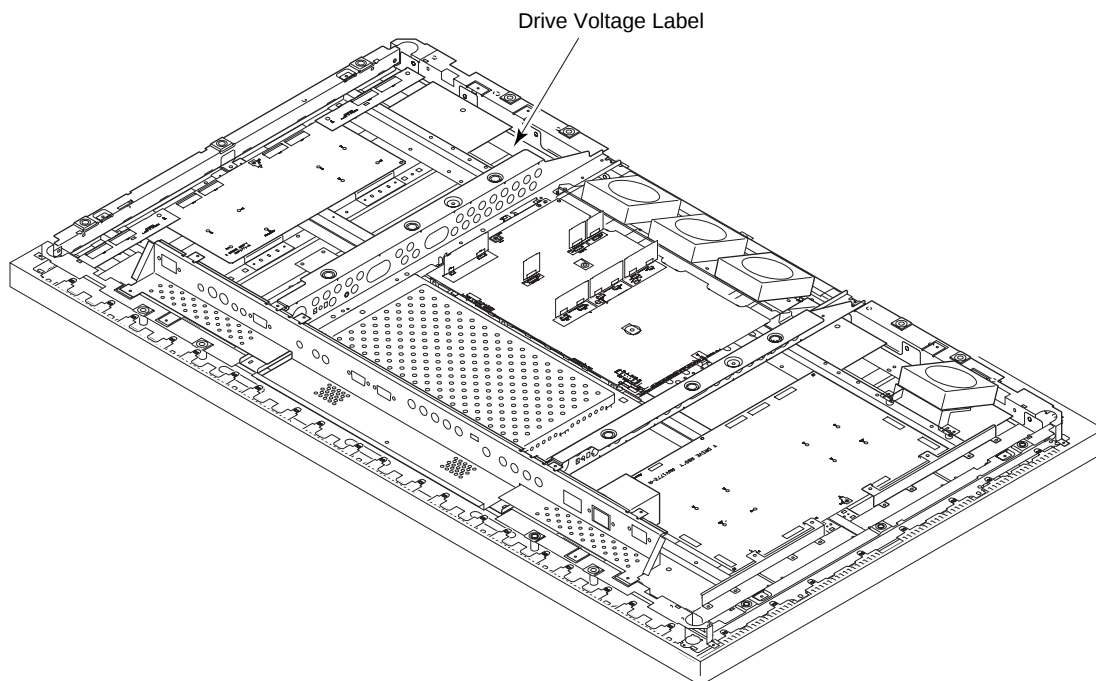
● When replaced

- 1) (Procedure 7) VOFS voltage adjustment
(Adjust the voltage to the voltage value mentioned on the "Drive voltage label")

■ UCOM ASSY

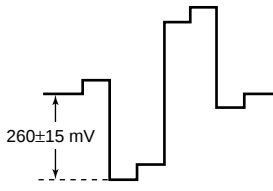
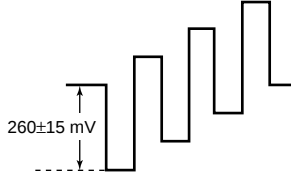
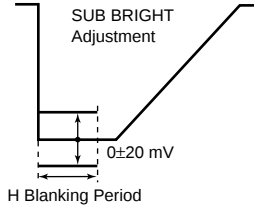
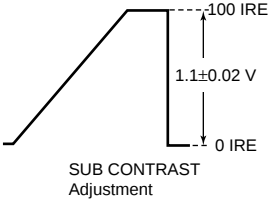
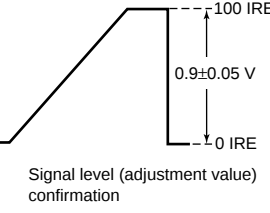
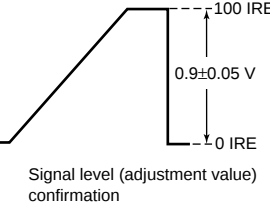
● When replaced

Remove IC3601, EEPROM (24LC64(1)SN-TBB) from the defect ASSY and replace it with the one on the new ASSY.

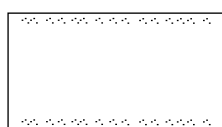


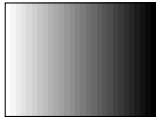
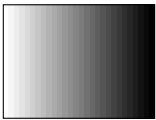
Position of Drive Voltage Label

■ Adjusting Method

Procedure	Adjusting Item	Input signal	Adjusting Point	Adjusting Method
1	Color-difference Level adjustment (R-Y LEVEL/ B-Y LEVEL) (502MX only)	Full Field Color bar signal	REFERENCE 2 in Factory mode R-Y LEVEL "BS5" Key	R-Y LEVEL adjustment Observe R-Y color-difference waveform at Pin 3 (INT_Cr) of IC1401 (MATRIX IC) in VIDEO Assy. Adjust R-Y LEVEL so that the point indicated in the right figure becomes "260mV±15mV". 
			REFERENCE 2 in Factory mode B-Y LEVEL "BS7" Key	B-Y LEVEL adjustment Observe B-Y color-difference waveform at Pin 4 (INT_Cb) of IC1401 (MATRIX IC) in VIDEO Assy. Adjust B-Y LEVEL so that the point indicated in the right figure becomes "260mV±15mV". 
2	SUB CONTRAST/ SUB BRIGHTNESS adjustment	RAMP signal	SUB VIDEO mode in Factory mode SUB CONTRAST..... "1" Key SUB BRIGHT "2" Key ACL. SW "BS5" Key	SUB BRIGHT / SUB CONTRAST adjustment 1) SUB BRIGHT rough adjustment Set P. ACL. SW OFF. Observe signal at Pin3 (RED SIG.) of IC1701 (RGB AMP) in Video Assy. Adjust so that the blanking period level of the signal becomes 0 IRE level.  2) SUB CONTRAST adjustment Set P. ACL. SW OFF. Adjust so that 0 to 100 IRE level of the signal at Pin3 (RED SIG.) of IC1701 (RGB AMP) becomes "1.1V".  3) SUB BRIGHT fine adjustment Set P. ACL. SW ON. Adjust so that the signal level in blanking period at Pin3 (RED SIG.) of IC1701 (RGB AMP) becomes 0 IRE level.  4) Signal level (adjustment value) confirmation Set P. ACL. SW ON. Observe the signal at Pin3 (RED SIG.) of IC1701 (RGB AMP). Confirm that the 0 IRE to 100 IRE level of the signal is "0.9V". 

Procedure	Adjusting Item	Input signal	Adjusting Point	Adjusting Method
3	VSUS/VADR/ STB5V/+14V Voltage adjustment	White 100% signal	VR201 (VSUS) MAIN POWER ASSY	VSUS (Sustain voltage) adjustment Adjust so that the voltage between TP201(VSUS) and TP202 (SUS GND) becomes ±1V of the voltage indicated at the "voltage indication label". The symptom in case of mis-adjustment If the VSUS adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, Panel will stop lighting.
			VR301 (VADR) MAIN POWER ASSY	VADR (Address voltage) adjustment Adjust so that the voltage between TP301(VADR) and TP302 (ADR GND) becomes "59V±0.5V". The symptom in case of mis-adjustment If the VADR adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, Panel will light white.
			VR111 (STB5V) MAIN POWER ASSY	STB5V adjustment Adjust so that the voltage between TP111(STB5V) and TP113(STB GND) becomes "+5V ± 0.1V".
			VR356 (+14V) MAIN POWER ASSY	+14V adjustment Adjust so that the voltage between TP355(+14V) and TP356 (AGND) becomes "+14V ± 0.1V".
Note) Be sure to measure between specified test points.				
4	VSUS UVP/+B Voltage adjustment	White 100% signal	VR401 (VSUS UVP) MAIN POWER ASSY	VSUS UVP adjustment Adjust so that the voltage between TP404 (V1) and TP405 (V2) becomes "0V ± 10mV".
			VR131 (+B) MAIN POWER ASSY	+B Voltage adjustment Adjust so that the voltage between TP131 (+B) and TP132 (P. GND) becomes "+380V ± 1.0V".
Note) Normally, these adjustments are not needed in repair service. Adjust them only when VR is rotated by mistake and it needs to be re-adjusted. Moreover, be sure to measure between specified test points in adjustment.				
5	VFZ Voltage adjustment	Any input signal	VR501 (VFZ) VF DD CONVERTER ASSY	VFZ Voltage adjustment Adjust so that the voltage between Pin 9 (VFZ+) and Pin 10 (VFZ-) of connector CN354 P3 in MAIN POWER Assy becomes "12V ± 0.1V".
Note) Be sure to measure between specified test points.				
6	5V/3.3V Voltage adjustment	Any input signal	VR552 (5V) DIGITAL VIDEO ASSY	+5V adjustment Adjust so that the voltage between TP553 (5V) and TP554 (DGND) becomes "+5V ± 0.05V".
			VR602 (3.3V) DIGITAL VIDEO ASSY	+3.3V adjustment Adjust so that the voltage between TP601 (3.3V) and TP602 (DGND) becomes "3.3V ± 0.05V".
Note) Be sure to use a non-metallic screw driver such as a ceramic screw driver in the adjustment. If a metallic screw driver is used, DC/DC converter may operate wrongly. Moreover, be sure to measure between specified test points.				

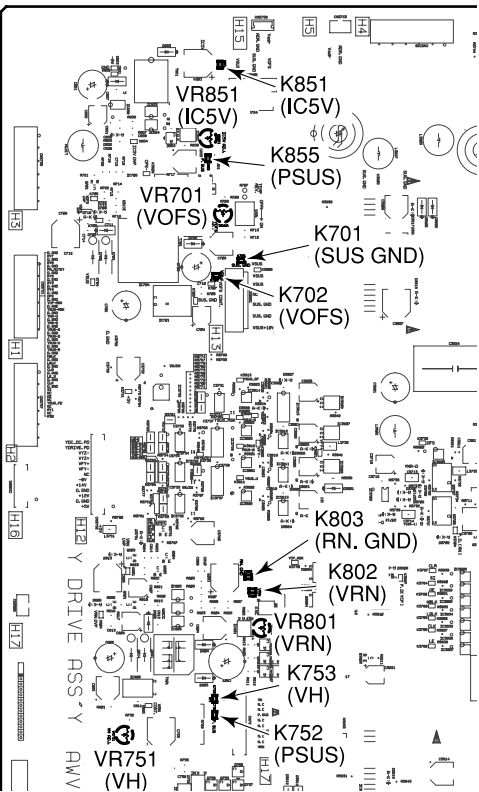
Procedure	Adjusting Item	Input signal	Adjusting Point	Adjusting Method
7	VOFS/VH/ VRN/IC5V Voltage adjustment	White 100% signal	VR701 (VOFS) Y DRIVE ASSY	VOFS (Offset voltage) adjustment Adjust so that the voltage between K702 (VOFS) and K701 (SUS GND) becomes $\pm 0.5V$ of the voltage indicated at the "voltage indication label". The symptom in case of mis-adjustment If the VOFS adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, Panel will light white.
			VR751(VH) Y DRIVE ASSY	VH (voltage for Scan IC) adjustment Adjust so that the voltage between K753 (VH) and K752 (PSUS) becomes $85V \pm 0.5V$. PSUS (=GNDH) is a floating GND and the electric potential is different from that of chassis GND. Be sure not to short-circuit PSUS (=GNDH) and another GND, because that may damage the unit. The symptom in case of mis-adjustment If the VH adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, panel will light white.
			VR801 (VRN) Y DRIVE ASSY	VRN (Minus Reset voltage) adjustment Adjust so that the voltage between K802 (VRN) and K803 (RN. GND) becomes $-200V \pm 0.5V$. The symptom in case of mis-adjustment If the VRN adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, Panel will stop lighting.
			VR851 (IC5V) Y DRIVE ASSY	IC5V adjustment Adjust so that the voltage between K851 (IC5V) and K855 (PSUS) becomes $+5.0V \pm 0.1V$. PSUS (=GNDH) is a floating GND and the electric potential is different from that of chassis GND. Be sure not to short-circuit PSUS (=GNDH) and another GND, because that may damage the unit.
Note) Be sure to measure between specified test points.				
8	Sustain Pulse Waveform adjustment	White 100% signal	DRIVE ADJ mode in Factory mode X-SUS-G....."2" Key Y-SUS-G "4" Key	X-SUS-G, Y-SUS-G adjustment Set to the indicated value with a key on the remote control unit. (refer to DRIVE ADJ mode)
			DRIVE ADJ mode in Factory mode X-SUS-B....."1" Key Y-SUS-B "3" Key	X-SUS-B, Y-SUS-B adjustment 1) Set adjustment value to "8", and confirm that green mis-discharging dots do not appear within 20mm from top & bottom of Screen. 2) When green mis-discharging dots appear, decrease the adjustment value "1" by "1" until green mis-discharging dots will disappear. Set the adjustment value when the green disappear. 3) Observe sustain waveform at each Drive Assy, between K3454 (X-PSUS) and K3455 (SUS-GND), and K3701 (Y-PSUS) and K3605 (SUS-GND). Confirm that the waveform is not distorted.  The symptom in case of mis-adjustment  Green mis-discharging dots appear within 20mm from top & bottom of Screen.

Procedure	Adjusting Item	Input signal	Adjusting Point	Adjusting Method																																																				
9	White Balance adjustment	Preparation setting	REFERENCE 1 in Factory mode CONTRAST....."1" Key BRIGHT "2" Key	Set CONTRAST to "128" and BRIGHT to "128".																																																				
		1) RAMP signal 	REFERENCE 1 in Factory mode R LOW..... "10" Key G LOW..... "11" Key B LOW..... "12" Key	LOW LIGHT adjustment 1) Observe the signals at TP terminals R: K2401, G: K2402, B: K2403, of VIDEO ASSY. Adjust with the keys on the remote control unit, so that the black level (0 IRE) of the signal is within the DC voltage range of "1.90V ± 0.05V". 2) Adjust with the keys on the remote control unit, so that the image on the screen becomes a little greenish white (T=8500k, dev.=0.005uv).																																																				
		2) White Signal (14 IRE: Gray)																																																						
		3) RAMP signal 	REFERENCE 1 in Factory mode R HIGH..... "7" Key G HIGH..... "8" Key B HIGH..... "9" Key	HIGH LIGHT adjustment 3) Set P. ACL. SW OFF. Observe TP terminals R: K2401, G: K2402, B: K2403 of VIDEO ASSY. Adjust with the keys on the remote control unit, so that the white level (100 IRE) is within the DC voltage range of "3.80V ± 0.05V". 4) Adjust with the keys on the remote control unit. so that the image on the screen becomes a little greenish white (T=8500k, dev.=0.005uv).																																																				
		4) White Signal (56 IRE: Gray)	SUB VIDEO mode in Factory mode ACL. SW"BS5" Key	Convergence adjustment 5) Repeat procedure 2) and 4) to converge the white balance. 6) After the adjustment, set ACL. SW ON.																																																				
		Skin color	REFERENCE 1 in Factory mode COLOR....."3" Key TINT "4" Key	Color balance adjustment After adjusting the white balance, check the skin color of figures in LD still pictures. If the color is not natural, adjust it with the keys on the remote control unit.																																																				
(Reference) Adjustment values using the Minolta color-difference meter (CA-100)																																																								
<table><tr><td></td><td></td><td></td><td>NTSC</td><td>PAL</td><td>HD</td><td>PC</td></tr><tr><td rowspan="6">White Balance</td><td rowspan="3">20% Window-Step signal (-3dB)</td><td>x</td><td>291</td><td>293</td><td>291</td><td>291</td></tr><tr><td>y</td><td>307</td><td>301</td><td>307</td><td>307</td></tr><tr><td>Y</td><td>3.7</td><td>3.1</td><td>2.8</td><td>1.1</td></tr><tr><td rowspan="3">80% Window-Step signal (-3dB)</td><td>x</td><td>291</td><td>293</td><td>291</td><td>293</td></tr><tr><td>y</td><td>307</td><td>301</td><td>307</td><td>301</td></tr><tr><td>Y</td><td>82.3</td><td>68.5</td><td>82.3</td><td>50.9</td></tr><tr><td rowspan="2">Skin Color</td><td rowspan="2">Window -chroma signal</td><td>x</td><td>455</td><td>440</td><td>428</td><td>——</td></tr><tr><td>y</td><td>380</td><td>370</td><td>377</td><td>——</td></tr></table>								NTSC	PAL	HD	PC	White Balance	20% Window-Step signal (-3dB)	x	291	293	291	291	y	307	301	307	307	Y	3.7	3.1	2.8	1.1	80% Window-Step signal (-3dB)	x	291	293	291	293	y	307	301	307	301	Y	82.3	68.5	82.3	50.9	Skin Color	Window -chroma signal	x	455	440	428	——	y	380	370	377	——
			NTSC	PAL	HD	PC																																																		
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	80% Window-Step signal (-3dB)	x	291	293	291	293																																																		
		y	307	301	307	301																																																		
		Y	82.3	68.5	82.3	50.9																																																		
Skin Color	Window -chroma signal	x	455	440	428	——																																																		
		y	380	370	377	——																																																		
10	MASK Level adjustment	Any input	DRIVE ADJ mode in Factory mode R SIDE LEVEL "10" Key G SIDE LEVEL "11" Key B SIDE LEVEL "12" Key	Side mask Color/Level adjustment Set to the indicated value with the keys on the remote control unit. (refer to DRIVE ADJ Mode)																																																				
			DRIVE ADJ mode in Factory mode R FULL LEVEL"BS5" Key G FULL LEVEL"BS7" Key B FULL LEVEL"BS9" Key	Full mask Color/Level adjustment Set to the indicated value with the keys on the remote control unit. (refer to DRIVE ADJ Mode)																																																				

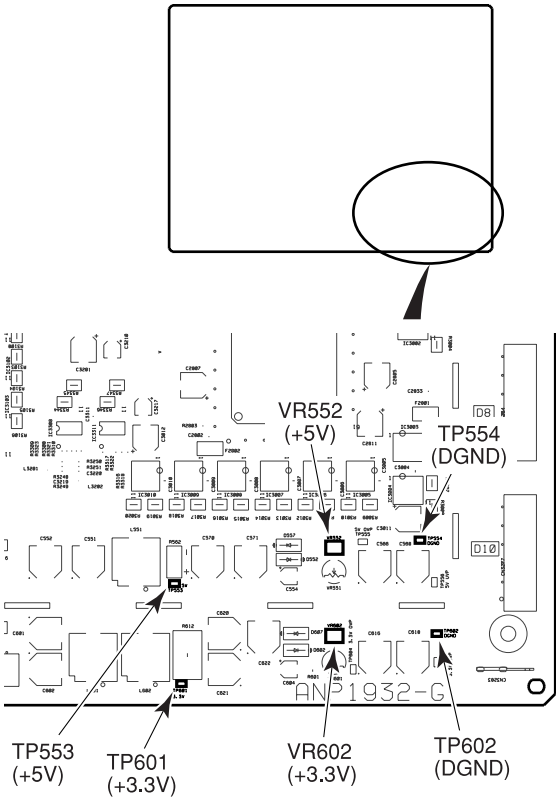
PDP-502MX, PDP-502MXE

Procedure	Adjusting Item	Input signal	Adjusting Point	Adjusting Method
11	Base Pulse number Adjustment (502MX only)	Any input	SUB VIDEO mode in Factory mode PULSE NUMBER"8" Key	Set to the indicated value with the keys on the remote control unit. (refer to SUB VIDEO mode)
12	ABL Level Value Adjustment (502MX only)	Any input	SUB VIDEO mode in Factory mode ABL LEVEL"9" Key	Set to the indicated value with the keys on the remote control unit. (refer to SUB VIDEO mode)
13	ABL Level Offset adjustment	Any input	REFERENCE 1 in Factory mode ABL LEV OFFSET"BS9" Key	Adjust to the ABL value mentioned on the "Drive voltage label" at the chassis of the glass panel.
14	Pulse Number Offset adjustment	Any input	REFERENCE 1 in Factory mode PLS NUM OFFSET"BS11" Key	Set to the indicated value with the keys on the remote control unit. (refer to REFERENCE 1 mode)

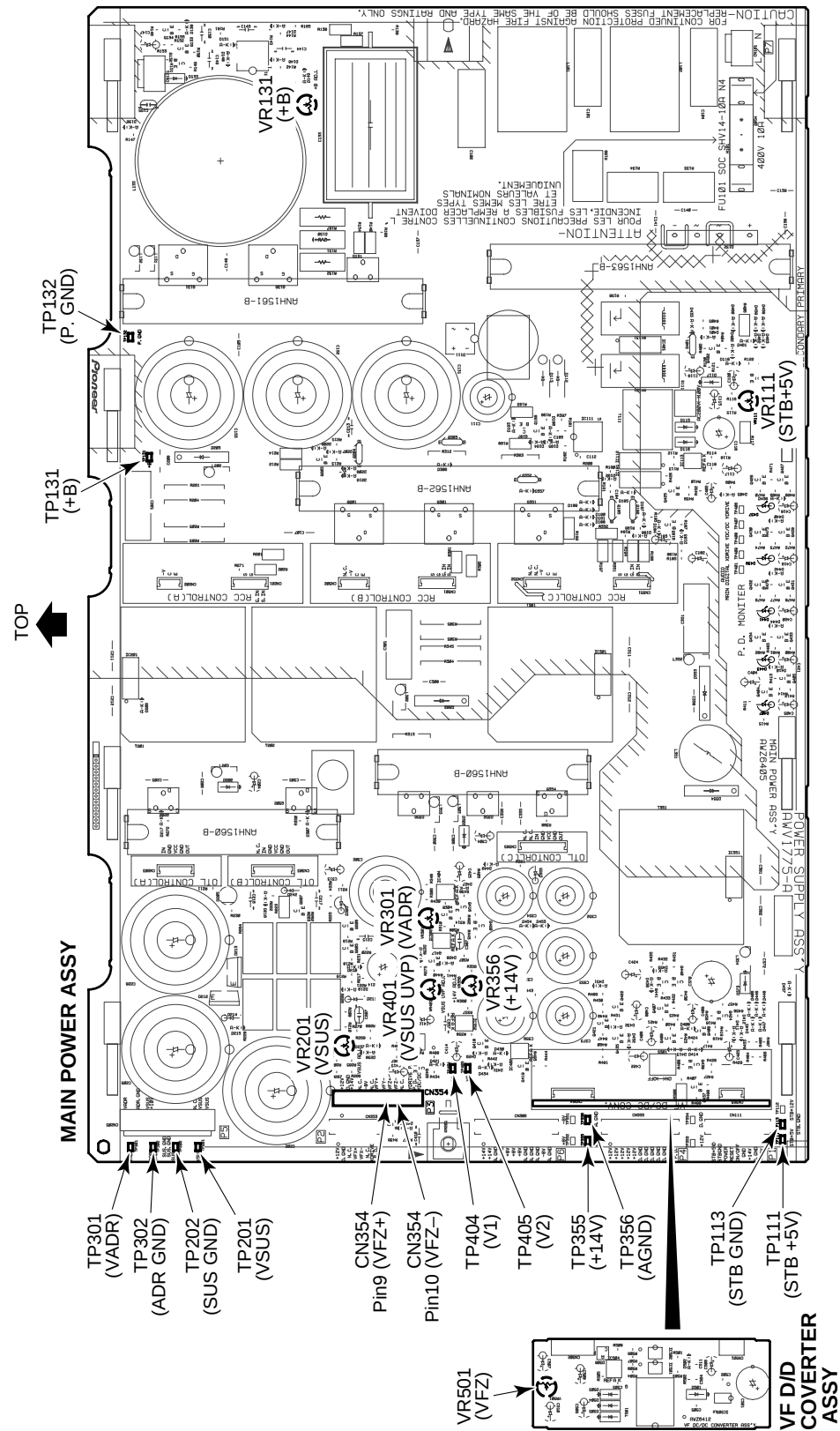
Y DRIVE ASSY



DIGITAL VIDEO ASSY



Adjusting points and Measuring points



Adjusting points and Measuring points

7. GENERAL INFORMATION

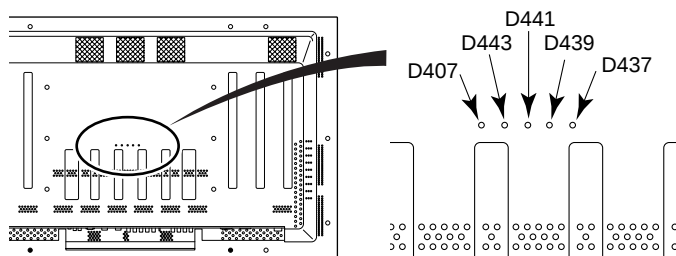
7.1 DIAGNOSIS

7.1.1 DIAGNOSIS METHOD

This PDP has several protection circuits, and the operation of the circuits activate power down circuit and set the unit automatically to standby mode in order to protect the circuit.

Power shut down operation of the unit can roughly be diagnosed by LED indicators at Main Power Assy.

Lighting of LEDs can be confirmed through five holes on Rear Panel.



■ Diagnosis of malfunctions when power down occurs (in lighting LEDs at Main Power Assy)

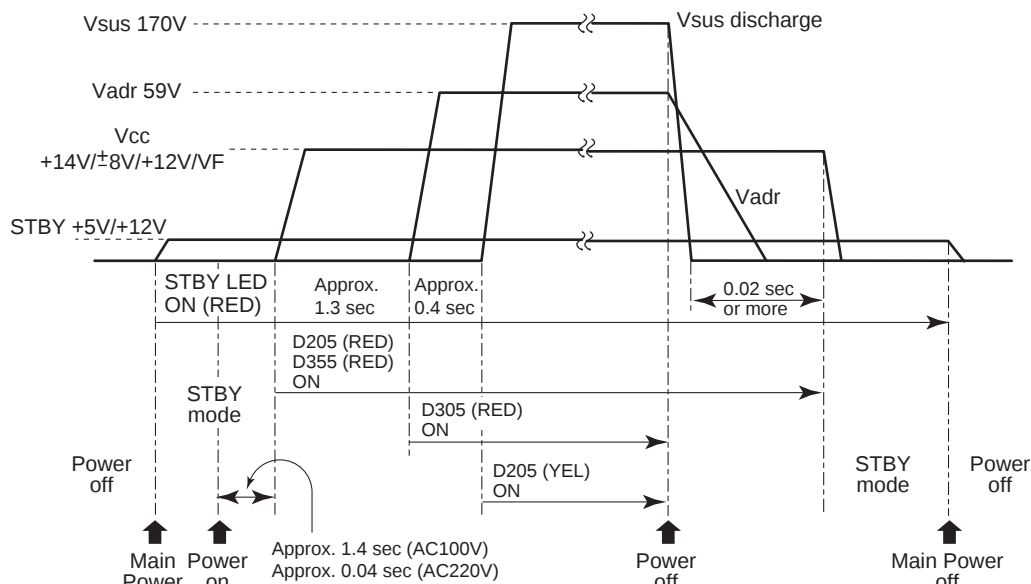
Lighting LED	The state of circuit	P.D. circuit in operation	Diagnosis	Failure points	Estimated failure parts
D407	High between base & emitter of Q415	VSUS OVP	When RCC Control (A) Assy is replaced, P.D. does not occur.	RCC Control (A) Assy	IC203 • Q208 • R232 • D224 • 226
			When OTL Control(A) Assy is replaced, P.D. does not occur.	OTL Control (A) Assy	IC204 • Q209 • 210 • R260
			Even when RCC Control(A) Assy and OTL Control(A) Assy are replaced, P.D occurs.	MAIN POWER Assy	IC201 • 202
	High between base & emitter of Q417	VADR OVP	When RCC Control (B) Assy is replaced, P.D. does not occur.	RCC Control (B) Assy	IC303 • Q305 • R316 • 314
			When OTL Control (B) Assy is replaced, P.D. does not occur.	OTL Control (B) Assy	IC304 • Q306 • 307 • R346
			Even when RCC Control(B) Assy and OTL Control (B) Assy are replaced, P.D occurs.	MAIN POWER Assy	IC301 • 302
	High between base & emitter of Q419	14V OVP	When RCC Control (C) Assy is replaced, P.D. does not occur.	RCC Control (C) Assy	IC353 • Q353 • R364 • D362 • 364
			When OTL Control(C) Assy is replaced, P.D. does not occur.	OTL Control (C) Assy	IC354 • Q356 • 357 • R396
			Even when RCC Control (C) Assy and OTL Control (C) Assy are replaced, P.D occurs.	MAIN POWER Assy	IC351 • 352
	D408 Anode is High / High between base & emitter of Q426	VSUS UVP	When CN205 is disconnected, P.D. occurs, and when RCC Control (A) Assy is replaced, P.D. does not occur.	RCC Control (A) Assy	IC203 • Q208 • R232 • 254 • C221
			When CN205 is disconnected, P.D. occurs, and when OTL Control (A) Assy is replaced, P.D. does not occur.	OTL Control (A) Assy	IC204 • Q209 • 210 • R260
			When CN205 is disconnected, P.D. occurs, and even when RCC Control (A) Assy and OTL Control (A) Assy are replaced, P.D occurs.	MAIN POWER Assy	IC201 • 202 • D212 • 214
			When CN3451 is disconnected, P.D. does not occur.	X DRIVE Assy	Pulse module IC3454 • 3459 • 3460
			When CN3601 is disconnected, P.D. does not occur.	Y DRIVE Assy	Pulse module IC3604 • 3609 • 3610
	D408 Anode is High / High between base & emitter of Q416	VADR UVP	When CN205 is disconnected, P.D. occurs, and when RCC Control (B) Assy is replaced, P.D. does not occur.	RCC Control (B) Assy	IC303 • Q305 • R316 • 338 • D320 • C317
			When CN205 is disconnected, P.D. occurs, and when OTL Control (B) Assy is replaced, P.D. does not occur.	OTL Control (B) Assy	IC304 • Q306 • 307 • R346

Lighting LED	The state of circuit	P.D. circuit in operation	Diagnosis	Failure points	Estimated failure parts
D407	D408 Anode is High/ High between base & emitter of Q416	VADR UVP	When CN205 is disconnected, P.D. occurs, and even when RCC Control (B) Assy and OTL Control (B) Assy are replaced, P.D. occurs.	MAIN POWER Assy	IC301 • 302 • Q302
			When CN205 is disconnected, P.D. does not occur.	CABLE Assy	
	D408 Anode is High/ High between base & emitter of Q418	14V UVP	When CN306 & 354 are disconnected, P.D. occurs.	MAIN POWER Assy 14V D/D CONV. BLOCK	RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352
			When CN306 is disconnected, P.D. does not occur.	ANALOG VIDEO Assy	
			When CN354 is disconnected, P.D. does not occur.	Y DRIVE Assy IC5V D/D CONV. BLOCK	IC852
			When VF D/D Converter Assy is replaced, P.D. does not occur.	VF DD CONV. Assy	IC503
	D408 Anode is High/ High between base & emitter of Q421	12V UVP	When CN355 is disconnected, P.D. occurs.	MAIN POWER Assy 12V D/D CONV. BLOCK	RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352
			When CN356 is disconnected, P.D. does not occur.	DIGITAL VIDEO Assy D/D CONV. BLOCK	IC551 • 601 • Q554 • 555 • 604 • 605
	D408 Anode is High/ High between base & emitter of Q420	8V UVP	When CN306 is disconnected, P.D. occurs.	MAIN POWER Assy 8V D/D CONV. BLOCK	RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352
			When CN306 is disconnected, P.D. does not occur.	ANALOG VIDEO Assy	
	D408 Anode is High/ High between base & emitter of Q435	-8V UVP	When CN306 is disconnected, P.D. occurs.	MAIN POWER Assy -8V D/D CONV. BLOCK	RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352 • D373
			When CN306 is disconnected, P.D. does not occur.	ANALOG VIDEO Assy	
D407 • D443	D405 Anode is High	B OVP		MAIN POWER Assy PFC BLOCK	IC131
	High between base & emitter of Q111	AC200V P.D.	AC power input is appropriate.	MAIN POWER Assy STB BLOCK	IC111 • 112 • 113 • T111
	D448 Anode is High.	VF OVP		VF D/D CONV. Assy	IC502 • 503 • 504
	TP555 Hi	5V OVP		DIGITAL VIDEO Assy 5V D/D CONV. BLOCK	IC551
	TP556 Hi	5V UVP			
D407 • D441	TP604 Hi	3.3V OVP		DIGITAL VIDEO Assy 3.3V D/D CONV. BLOCK	IC601
	TP603 Hi	3.3V UVP			
D407 • D439	D4501 Anode is High.	AUDIO P.D.		AUDIO Assy	IC4502 • C4520 • 4522
	D3457 Anode is High.	12V OCP	Output voltage of IC3456, 3457, 3458 are normal		Pulse module IC3454 • 3455 • 3459 • 3460
			Output voltage of IC3456, 3457, 3458 are abnormal.		IC3461 • 3462 • 3463 • 3465 • 3451 • 3452 • 3453 • 3464
	K706Hi	VOFS OVP		Y DRIVE Assy VOFS D/D CONV. BLOCK	IC702 • 704
	K705Hi	VOFS UVP	Drive section (drive control signals & drive signal output elements) in normal operation.	Y DRIVE Assy VOFS D/D CONV. BLOCK	IC701 • 702 • 704
			VOFS D/D Conv. Block in normal operation	Y DRIVE Assy SUS_MSK BLOCK	R3717 • 3730
	K754Hi	VH OVP		Y DRIVE Assy VH D/D CONV. BLOCK	IC751 • 752
	K751Hi	VH UVP	Drive section (drive control signals & drive signal output elements) in normal operation.	Y DRIVE Assy VH D/D CONV. BLOCK	IC751 • 752 • 755
			VH D/D Conv. Block in normal operation	SCAN MODULE	SCAN IC

Lighting LED	The state of circuit	P.D. circuit in operation	Diagnosis	Failure points	Estimated failure parts
D407 • D439	K751Hi	VH UVP	Scan Module in normal operation.	Y DRIVE Assy IC5V D/D CONV. BLOCK	IC851 • 852 • 853
	K804Hi	VRN OVP	Drive section (drive control signals & drive signal output elements) in normal operation.	Y DRIVE Assy VRN D/D CONV. BLOCK	IC801 • 803
	K801Hi	VRN UVP	VRN D/D Conv. Block in normal operation.	Y DRIVE Assy VRN D/D CONV. BLOCK	IC801 • 802 • 803
				YDRIVE Assy SUS_MSK BLOCK	R3717 • 3730
	K854Hi	IC5V OVP		Y DRIVE Assy IC5V D/D CONV. BLOCK	IC851 • 853
D407 • D437	K3607Hi	12V OCP	Output voltage of IC3606, 3607, 3608 are normal		Pulse module IC3604 • 3605 • 3609 • 3610
			Output voltage of IC3606, 3607, 3608 are abnormal.		IC3611 • 3612 • 3613 • 3615 • 3601 • 3602 • 3603 • 3614
	K3704Hi	RESET OCP		Y DRIVE Assy RESET BLOCK	Q3708
	D3751 Anode is High.	DRIVE STOP P.D.		DIGITAL VIDEO Assy	IC2201 (IC23)

OVP: Over Voltage Protection, OCP: Over Current Protection, UVP: Under Voltage Protection

■ Diagnosis of malfunctions by power coming up sequence



The power coming up sequence of power supply

■ Simple diagnosis using LEDs at Main Power Assy

The state of LEDs at Main Power Assy	Estimated P.D. circuit in operation
After D205 lights up in red, D407 lights up. (D205 lights up in yellow in normal operation.)	VSUS UVP
After D305 is put out the light, D407 lights up. (D305 lights up in red in normal operation.)	VADR UVP
After D355 is put out the light, D407 lights up. (D355 lights up in red in normal operation.)	14V • 12V • ±8V UVP, B OVP, VF OVP
D407 lights up at the stand-by mode.	AC200V P.D.
After D205, D305 and D355 lights up normally, D407 lights up.	VSUS OVP
After D305 and D355 lights up normally, D407 lights up.	VADR OVP
After D355 lights up normally, D407 lights up.	14V OVP

■ Diagnosis when under voltage is detected at V SUS / V ADR voltage lines.

- Disconnect connector CN205 P5 at Main Power Assy and turn on the power.
If the power is turned on and D205 at Main Power Assy lights up in yellow, cause of the under voltage is not inside Main Power Assy.
If P.D. occurs, V SUS / V ADR DC-DC Converter block at Main Power Assy may be defective.

■ Diagnosis when under voltage is detected at 14V, 12V, +-8V voltage lines

- Be sure to turn off High Power CUT SW, S301 at Power Supply Assy. (important)
- Disconnect CN306 P6, CN355 P4, CN354 P3, CN353 P2 at Main Power Assy one by one, and turn on the power of the unit.
(Do not disconnect all four connectors at the same time and turn on the power. Because this leads to no load of power supply and that is very dangerous.)
- When the power is turned on with a connector disconnected, and if Low power supply DC-DC Converter operates normally with lighting D355 and D205 in red, cause of under voltage is not inside Main Power Assy.
- If P.D. still occurs after disconnecting each connector, 14V DC-DC Converter block at Main Power Assy may be defective.

■ The function of High Power CUT SW, S301 at Main Power Assy

- When S301 is turned off, V SUS / V ADR DC-DC Converter does not operate. However, 14V DC-DC Converter operates normally.
- Therefore, diagnosis from Signal Input circuit to before Drive circuit is possible without danger of breaking Drive section by mistake.

■ AC100V/AC200V Change-over SW, S111 at Main Power Assy

- Only PDP-502MXE is set to AC200V.
- When the SW is set to AC100V, AC200V P.D. detecting circuit will operate. (Even when the unit is in Stand-by mode, the detecting circuit is in operation.)

■ Diagnoses of the malfunctions by LEDs at Digital Video Assy, D2302/D2306

LED	Title (Color of Light)	The timing of lighting	Estimated failure parts
D2302	STOP (GREEN)	Lights on in normal operation It lights up at every V rate, when Drive pulse output from IC2201 is normal.	Around IC2101/IC2151/IC2801 /X3202 (Xtal)
D2302	PBusy (RED)	Light is put off in normal operation. It lights up when System Control CPU (IC3604) and Panel CPU are communicating.	Around Connector and Panel CPU and X3202/X3201 (Xtal)
D2306	IP Busy (RED)	It lights up at every V rate during IP processing.(Video input) Light is put off when IP processing is not done. (PC input)	Around IC1801/IC1901/IC2001

■ Diagnosis method of ANALOG VIDEO Assy

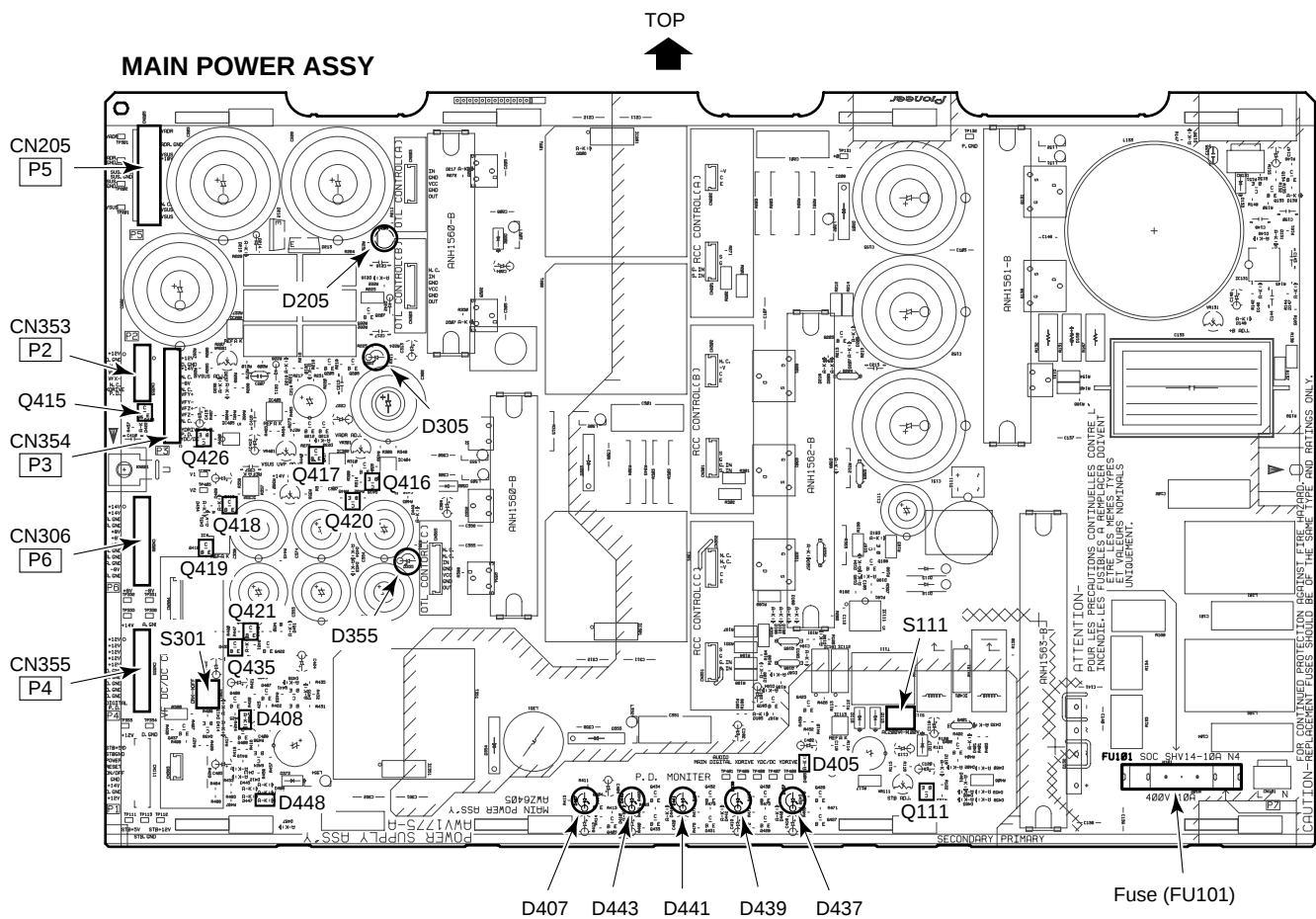
- Portion of Analog Video Assy underneath the Y/C Sepa Assy, can be diagnosed in operation just by removing the Y/C Sepa Assy.
- In this time, carry out diagnosis using an input signal that does not need YC separation.

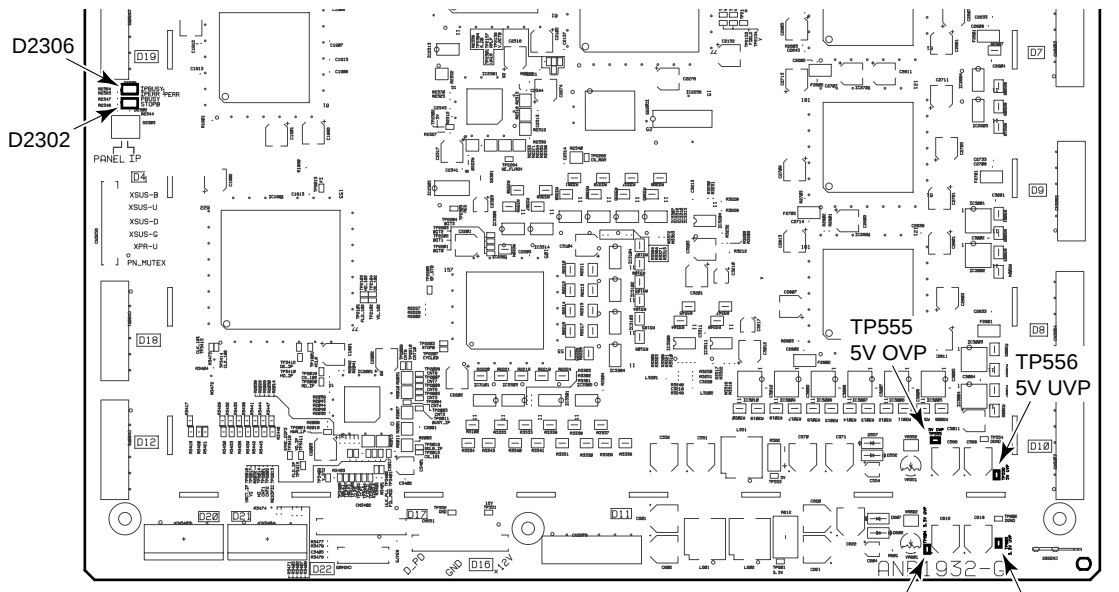
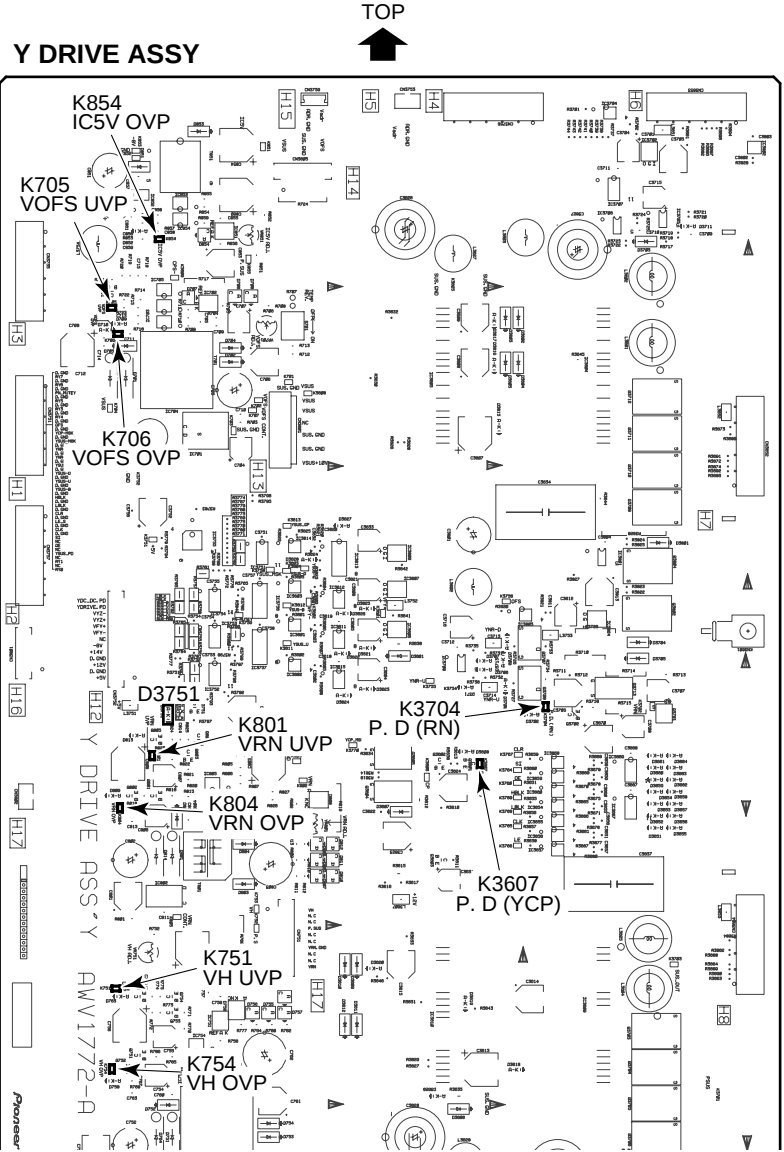
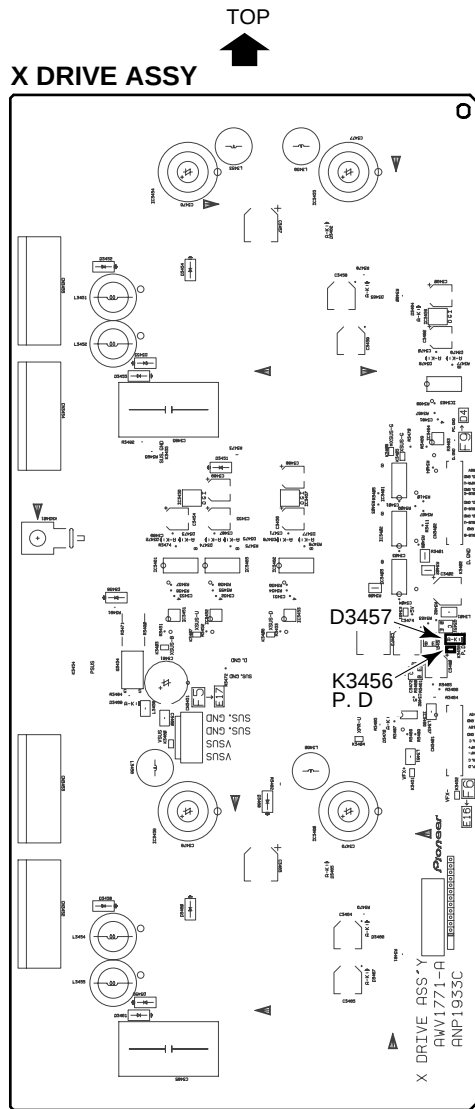
■ Diagnosis of malfunctions other than the operation of protection circuits

The state of the unit	Estimated failure mode
STBY indicator does not light at all	● AC power input is not appropriate. ● Stand-by power supply block is defective. ● U-com Assy is defective. ● Connectors disconnected.
Power does not go on Power shuts down immediately after power on. (back to Stand-by)	● U-com Assy is defective.
Dots like luminance spots appear on the screen.	● Drive section voltage is abnormal. (VSUS, VADR, VOFS, VH, VRN) ● X Drive Assy and Y Drive Assy are defective. ● Scan Module is defective.
Screen does not emit lights at all.	DIGITAL VIDEO Assy is defective.
Fuse is blown.	● Q131–Q136, D131, IC131 Defective ● R133, R134, R168 Defective ● Q201, Q202, RCC Control (A) Assy, OTL Control (A) Assy Defective ● Q301, Q302, RCC Control (B) Assy, OTL Control (B) Assy Defective ● Q351, Q354, RCC Control (C) Assy, OTL Control (C) Assy Defective

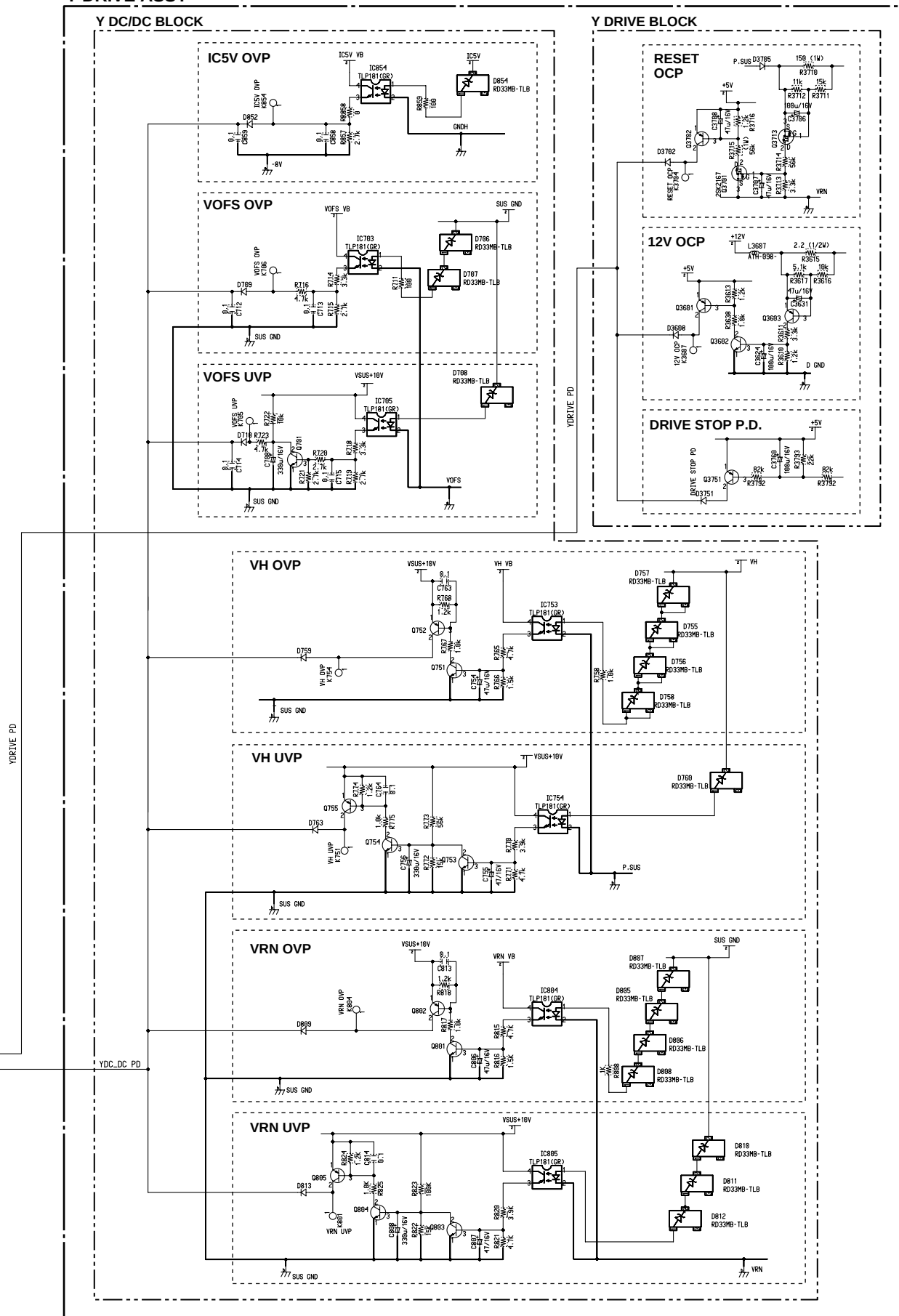
■ Note for repairing in case of blown fuses

- Never turn on the power of the unit again just by replacing the fuse, when the fuse is blown.
Because, it is rare case that the fuse itself is defective. If the power is turned on again without resolving the cause of over current, the unit is damaged more.
- Be sure to check parts such as In-Rush current protective resistors where excessive current may flow.
Because, they may be damaged secondarily.
- Be sure to find out all defective parts caused by a blown fuse.
Because, if the power is turned on with even one defective part left in the circuit, this may lead the other parts to become defective again.





Y DRIVE ASSY



A

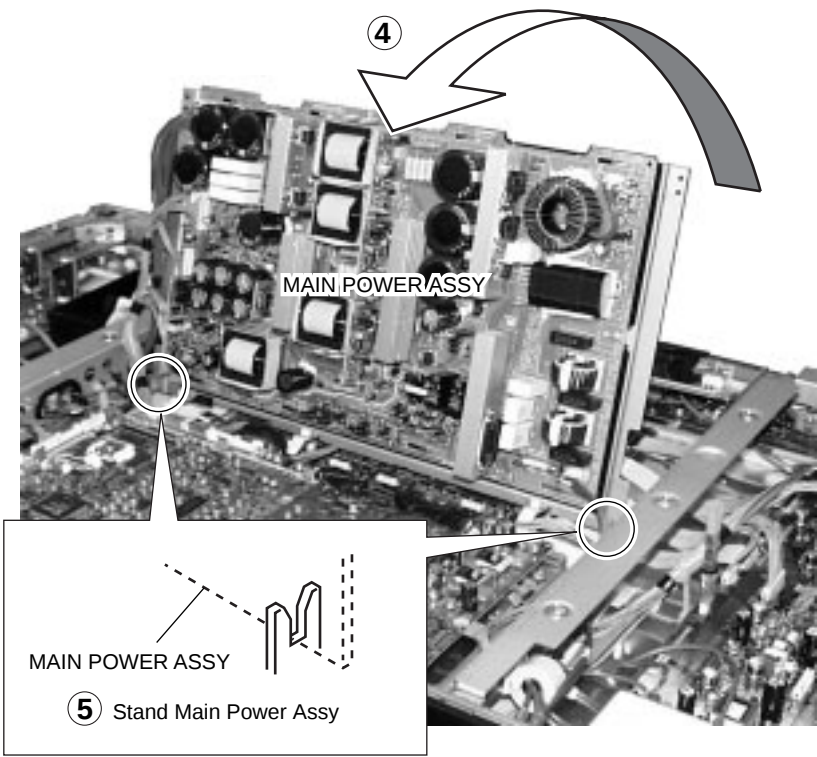
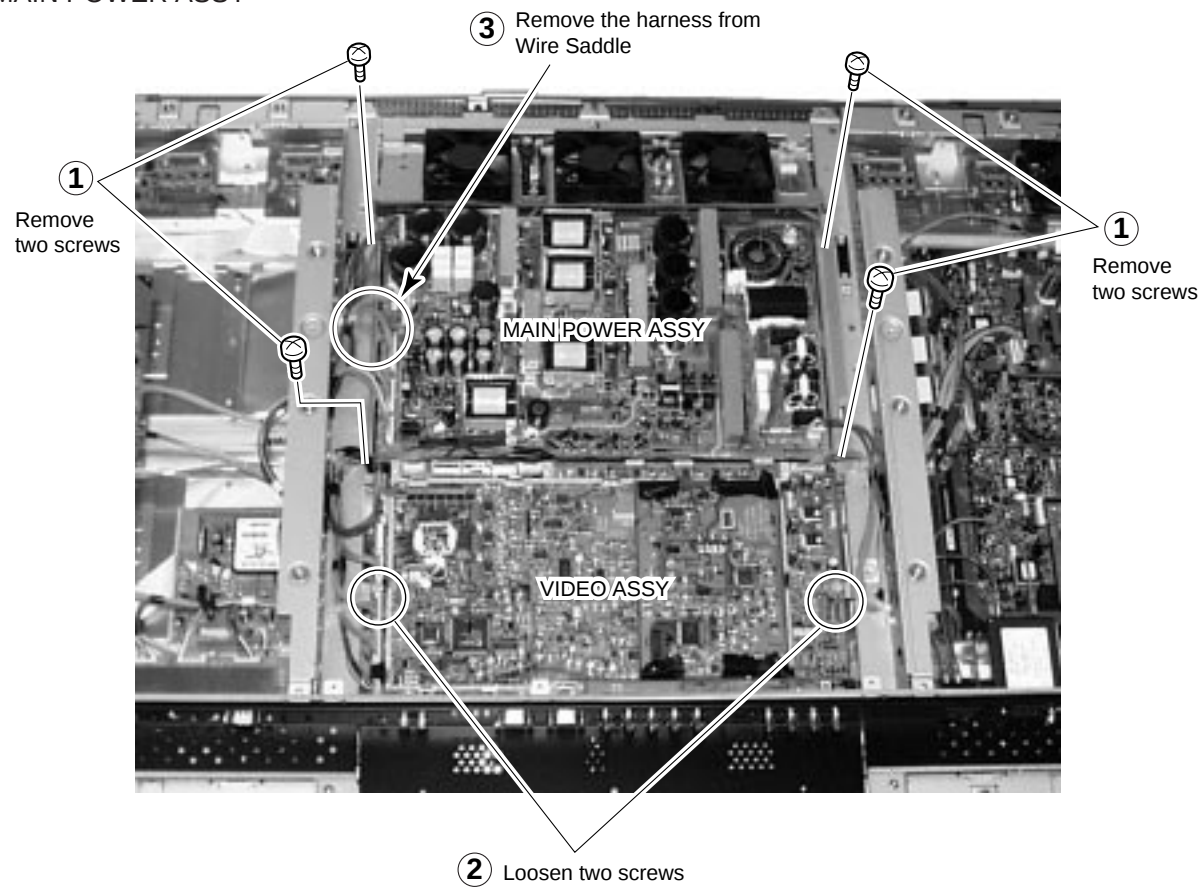
B

C

D

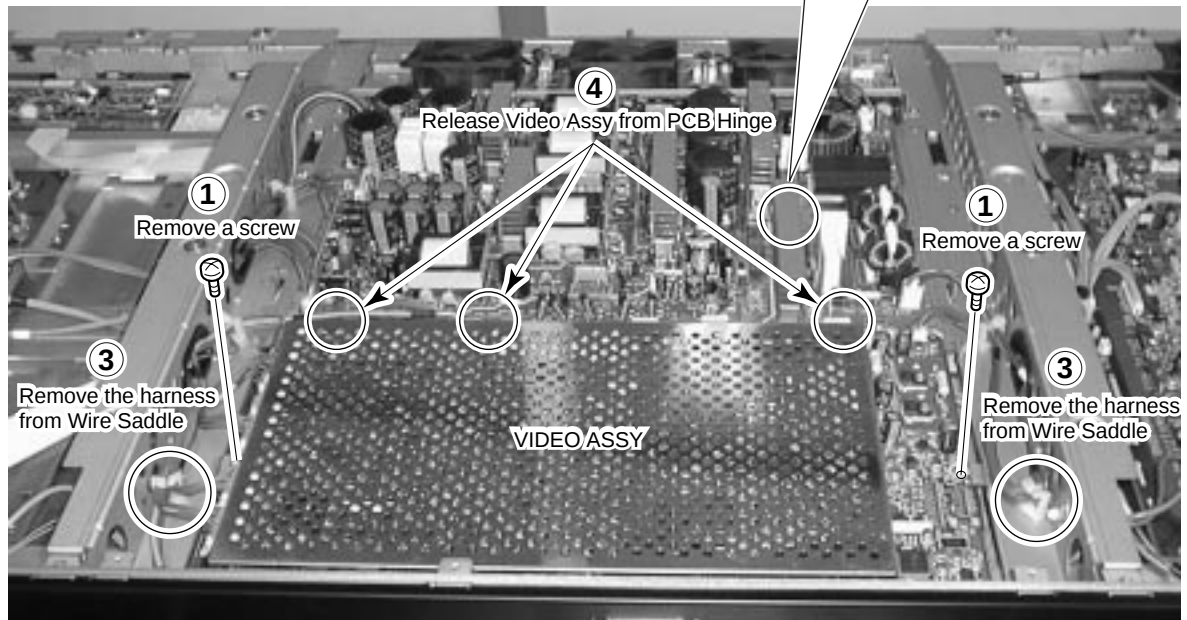
■ Service Position

1. MAIN POWER ASSY

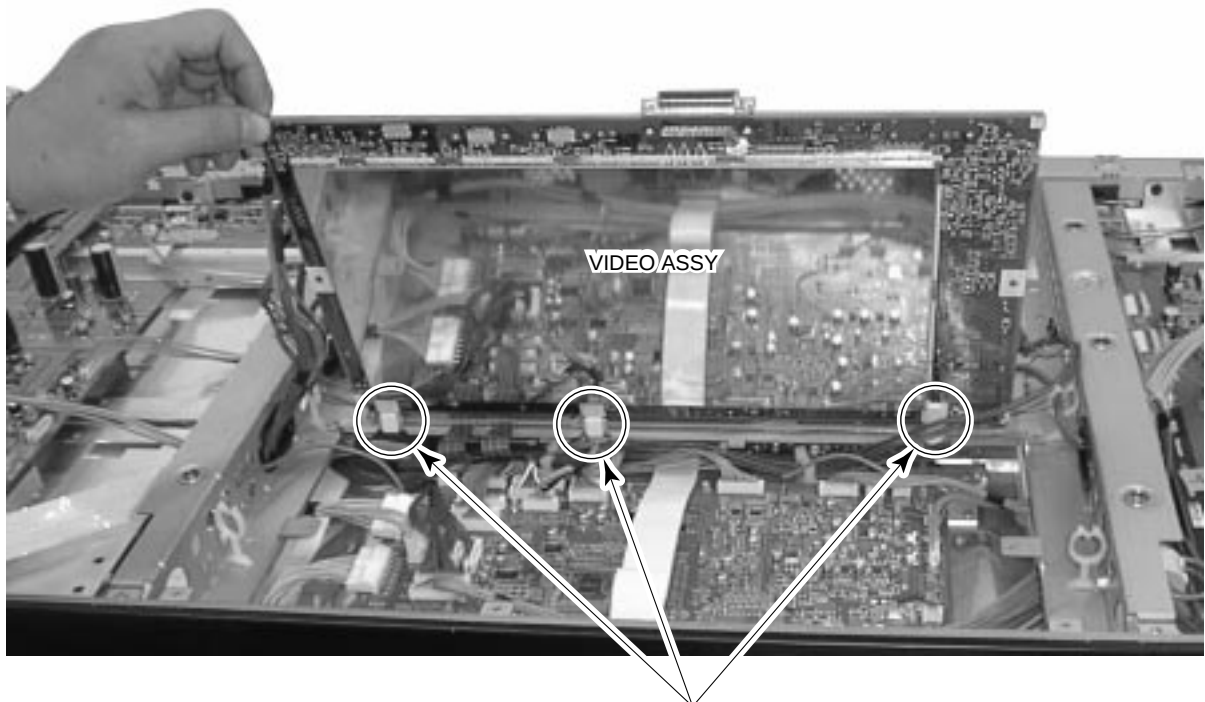


2. VIDEO ASSY

Note) Shield Case of Video Assy should not touch the heat sink at the primary side of Main Power Assy in standing Video Assy. (Noise may be generated and that may break the Main Power Assy)



2 Remove all screws and nuts from Terminal Panel



7.1.2 DISASSEMBLY

1. Removing Front Case (Figure 1)

- 1) Secure the unit on the stand in the upright position.
- 2) Remove 14 screws (A): BBZ40P160FZK at the outermost circumference of Rear Case.
There is one screw with a screw collar. Pay attention to the direction of the collar. (Refer to Figure 1)
- 3) Remove 4 screws (B): BBZ40P160FZK.
- 4) In this condition, only Front Case can be detached from the unit by pulling out Front Case in the forward direction.

Note) Be careful of Remote Receiver Holder and SW Holder in detaching Front Case, because they are not fixed to Front Case.

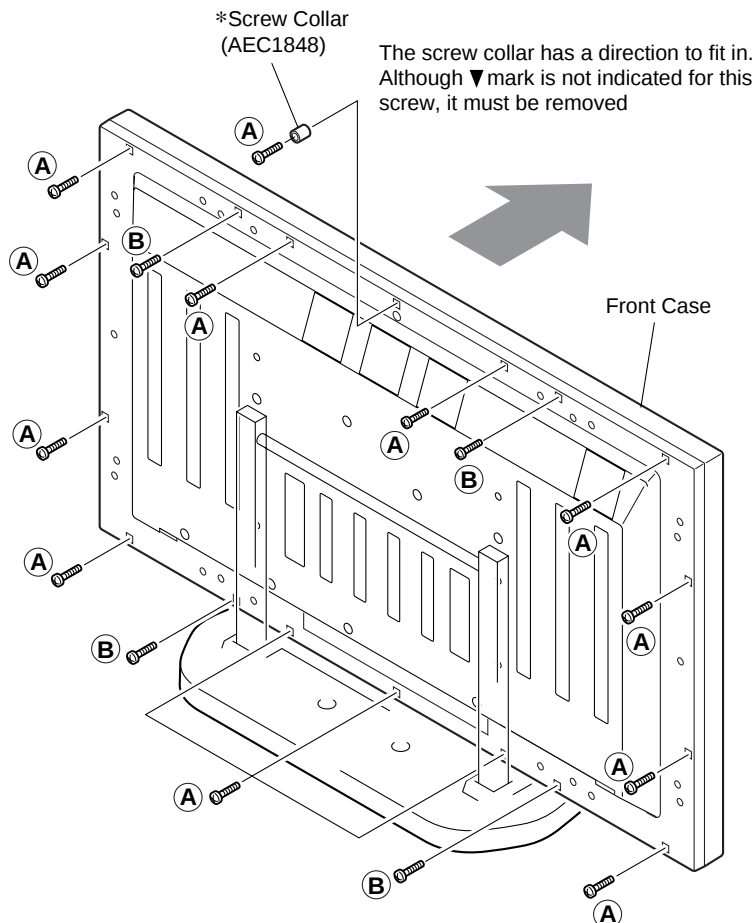


Figure 1 Removing Front Case

2. Removing Rear Case (Figure 2)

- 1) Place the unit with Front Panel down on a flat cushion.
- 2) Remove a screw rivet (AEC1852).
- 3) Remove 14 screws (A). (Refer to Removing Front Case)
- 4) Remove 17 screws (C): AMZ30P100FZK.
- 5) Remove 2 stand-bolts (D): ABA1277.
- 6) In this condition, Rear Case can be detached.

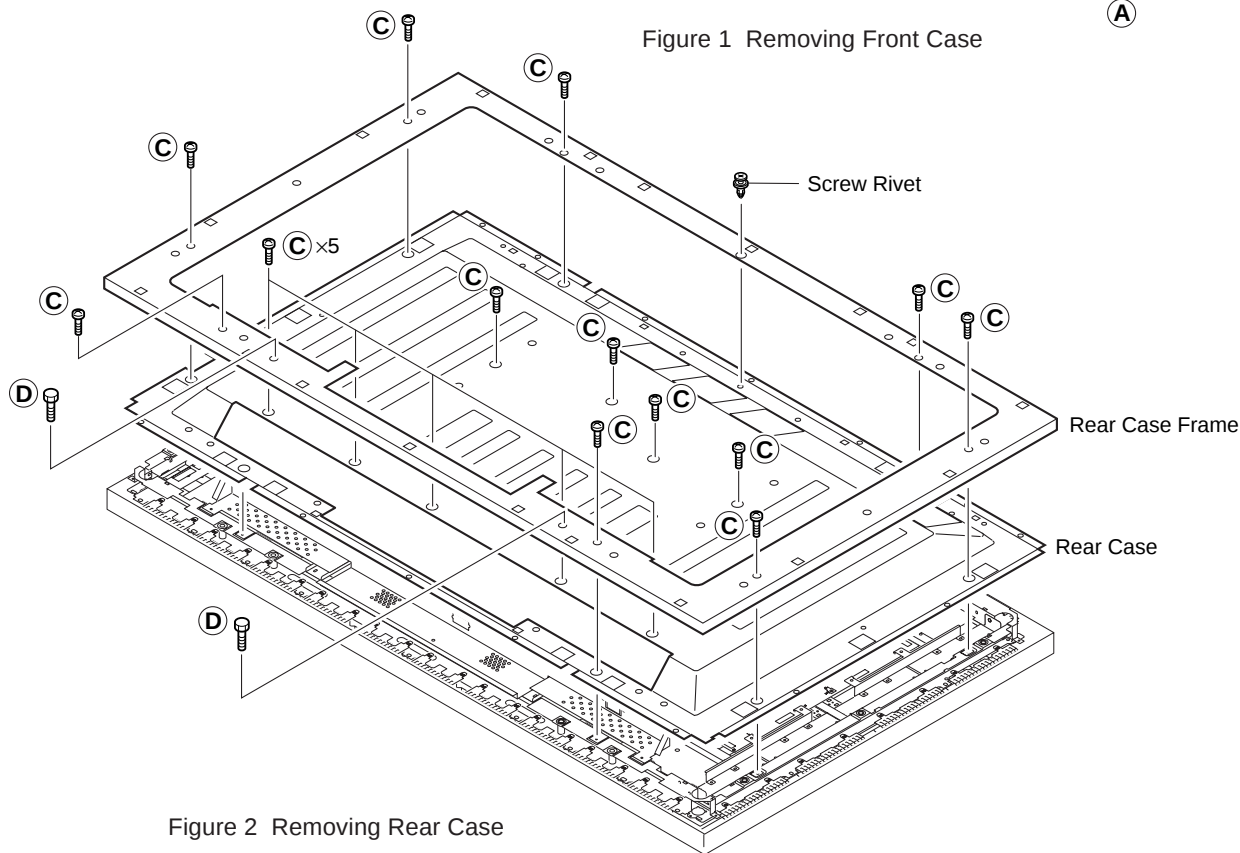


Figure 2 Removing Rear Case

3. Removing and installing Front Protection Panel

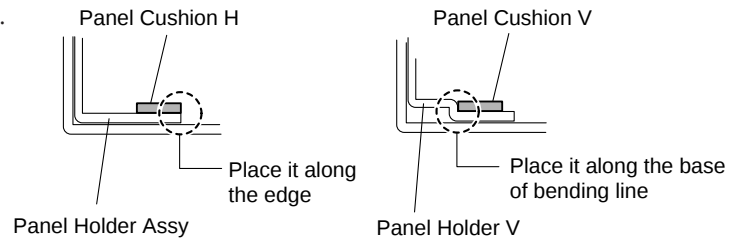
- 1) Remove all 30 screws (E): BPZ30P080FZK that fixes Panel Holder V and Panel Holder Assy to Front Case.
- 2) Remove Front Protection Panel and replace it.
- 3) Install Front Protection Panel by attaching to the bottom left side first, and then attach a Corner Cushion to each corner (only bottom left side, attach a Corner Gasket).

Note) When new Front Protection Panel is installed, Front Cushion H and Front Cushion V attached to Front Case are not needed to be replaced.

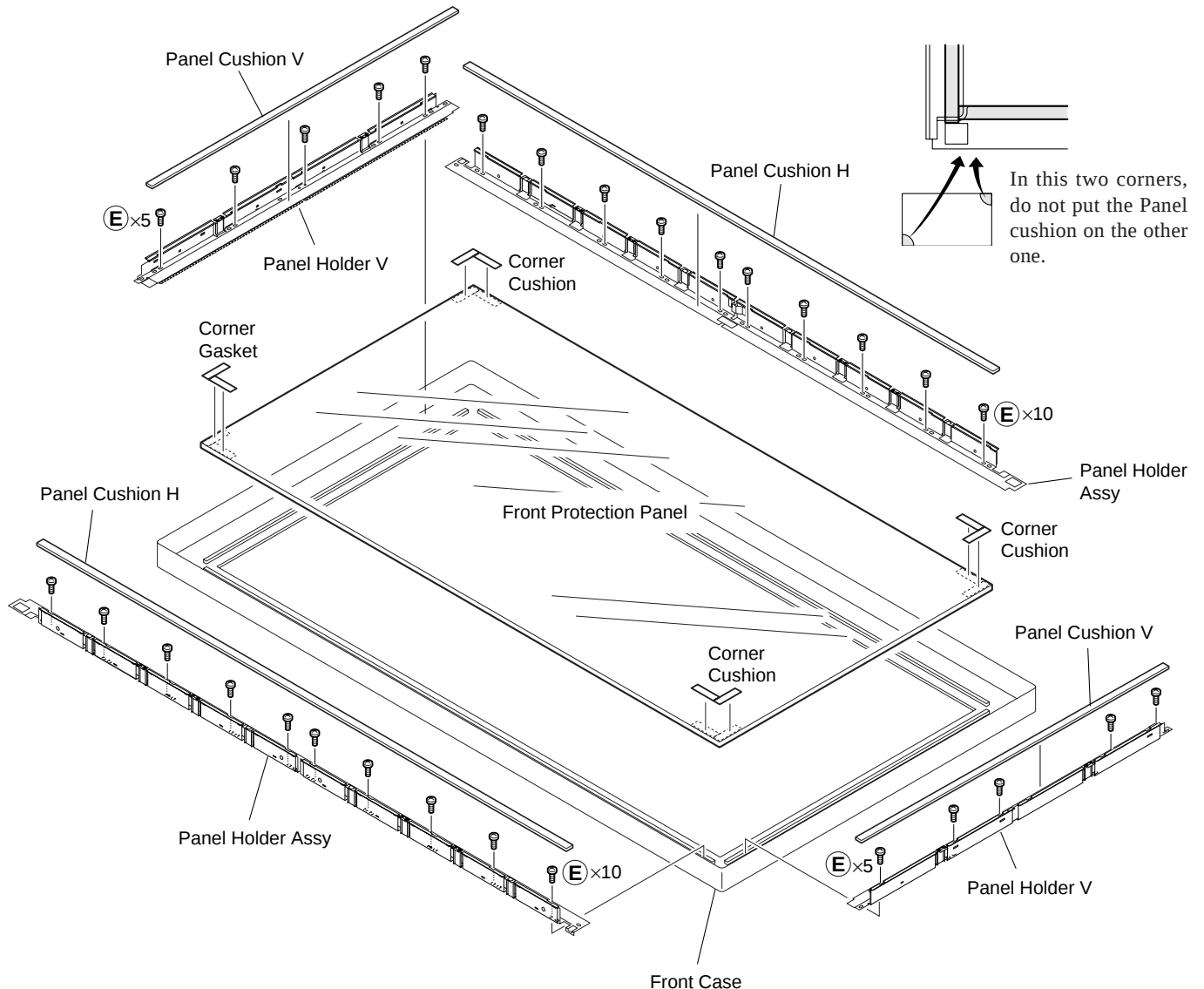
- 4) Assemble Front Case in the opposite order of disassembling it. Mount Panel Holder Assy first, then mount Panel Holder V.

Note)

- Attach Panel Cushion V along the base of bending line of Panel Holder V, and attach Panel Cushion H along the edge of Panel Holder Assy like shown in Figure 3.
- Panel Holder V / Panel Shield V and Panel Holder Assy / Panel Shield H are inlaid fixed structures.
- Be careful not to lose Remote Receiver lens, because it is not fixed to any where after removing Panel Holder Assy.



How to attach Panel Cushions



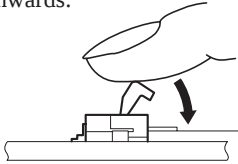
7.1.3 WIRING

When forming the wire cables, be careful not to exert excessive pressure on the cables as this will result in the disconnection of the connectors.

Press-down type lower contact connector

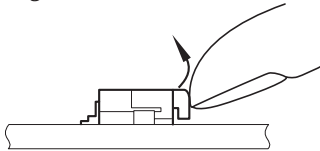
1. Locking

Lock applying force in the arrow direction so that the connector is pressed down inwards.

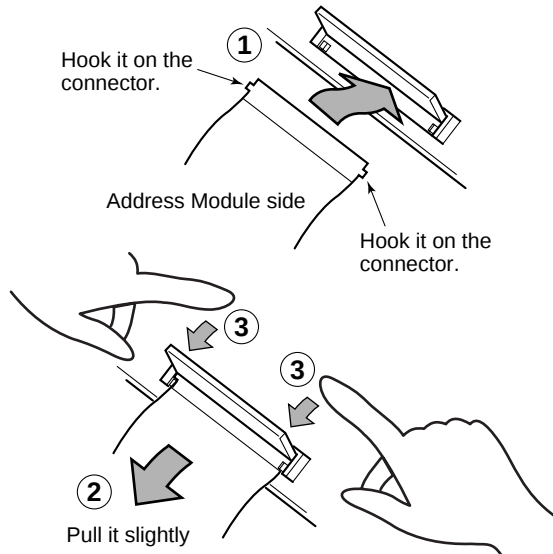


2. Unlocking

Push up with your nail, or something soft. Do not use thin tools such as the tip of screwdrivers, because they will damage the electrode.



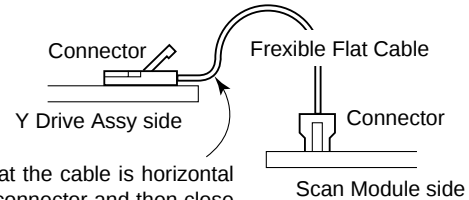
- Insert the flexible cables straight until the end. Insert the flexible cable reinforcing plates in parallel to the connectors. Moreover, insert the horizontal-connecting connectors horizontally.
- In connecting Address Modules and Cable Assy, and in connecting Scan Modules and Y Drive Assy with the flexible cables, hook both edges of the flexible cables on the connectors and fix them, then close the covers. Insert the flexible cables in parallel to the connector, otherwise the connectors may be damaged.



Note) When closing the connector cover, press both edges of the cover by fingers to lock it. Pressing the center of the cover may damage it.

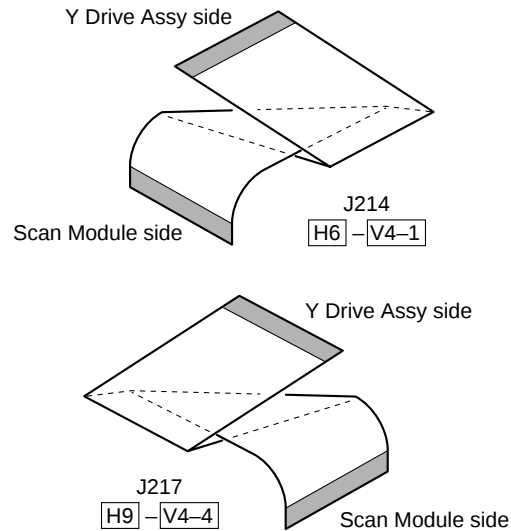
Notes

- 1) Bend the flexible cable between Y Drive Assy and Scan Module at the Y Drive Assy side, and close the cover. (To prevent damage of cover)



Bend so that the cable is horizontal to Y Drive connector and then close the cover.

Moreover, when [H6] - [V4] -1 and [H9] - [V4] -4 flexible cables are replaced in repair service, be careful of the way of bending. For [H6] - [V4] -1 flexible cable, be careful that it does not touch the chassis of FAN.

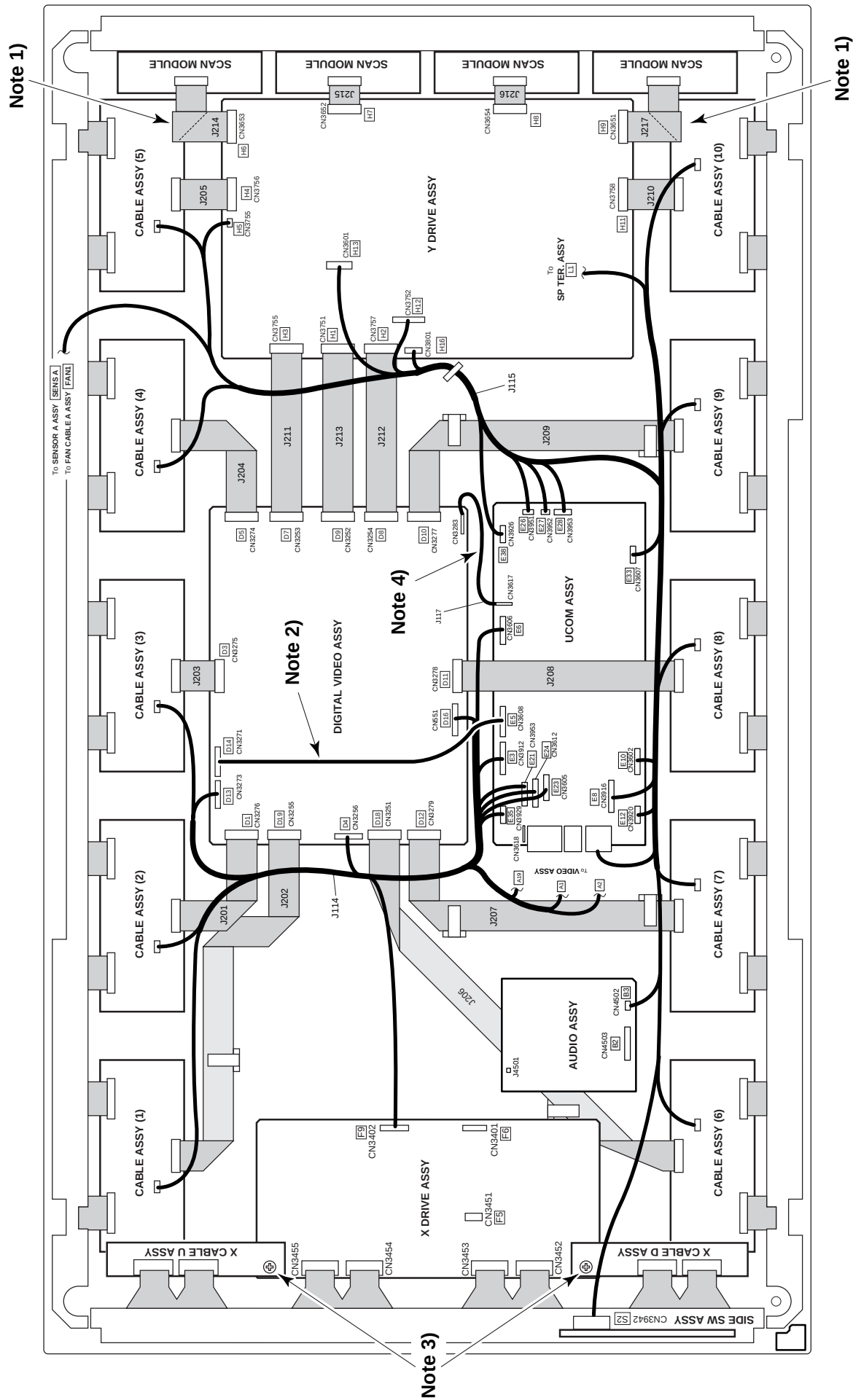


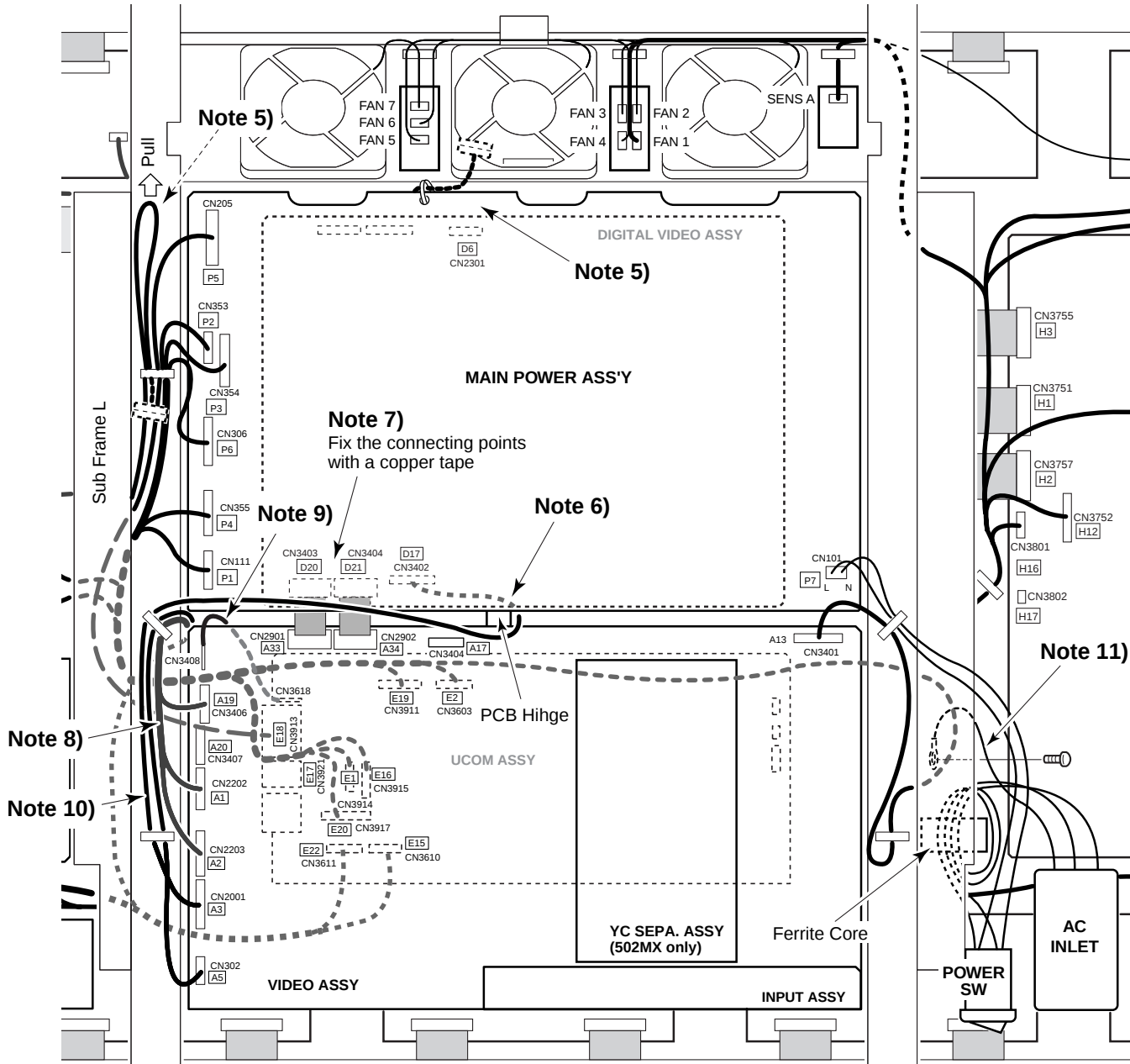
How to bend the flexible cables

- 2) Place the cable between Digital Video Assy [D14] and U-Com Assy [E5] along the top of Shield Case of Digital Video Assy. (To prevent noise)
- 3) Be careful of X Drive Assy and X Cable D Assy / X Cable U Assy in repair service. Because, they are tightened together with earth metal fittings being put between X Drive Assy and X Cable D Assy, X Drive Assy and X Cable U Assy.
- 4) Be sure to wire between U-Com Assy CN3617 and Digital Video Assy CN3283 with the grounding solid wire after repair service.

Others (Attention to mis-wiring)

- If U-Com Assy [E5] 12pin and Digital Video Assy [D17] 12pin are wired by mistake, the unit will not operate.
- If U-Com Assy [E28] 6pin and U-Com Assy [E38] 6pin are wired by mistake, the unit will not operate and the temperature sensor may be damaged. Be sure to check the temperature sensor in the case of mis-wiring.





5) Do not connect neither ends of the wire between Digital Video Assy [D6] and Video Assy [A17] to the Assys with connectors.

[D6] side Bind to chassis of Main Power Assy with a binder and place it in the open space. At this time, keep the wires and the connector away from FANs and each part at the Main Power Assy. Make sure that the wires and the connector do not touch them.

[A17] side..... Pass the hole of Sub Flame L and fix with Wire Saddle in the open space, then pull the remaining wires in the arrow direction shown in the upper figure.

6) Place the wire between Digital Video Assy [D17] and Video Assy [A3] through the right side of the PCB Hinge.
(To prevent noise)

7) Be careful to handle [A33] side of the coaxial flexible cable between [A33] and [D20], [A34] side of the coaxial flexible cable between [A34] and [D21]. Because they are fixed by soldering. Moreover, fix the connecting points with a copper tape.

8) Do not pass a band of wires from U-Com Assy to Video Assy [A1], [A2] and [A19], through the hole of Sub Flame L. Place them along the flame and fix with a cable holder.

9) Be sure to wire between U-Com Assy CN3618 and VIDEO Assy CN3408 with the grounding solid wire after repair service.

10) Connect the housing cable to [A3] with the connector CN2001 at the Video Assy, after passing through the ferrite core on Sub Flame L.

11) Be sure to confirm the connection of Grounding.

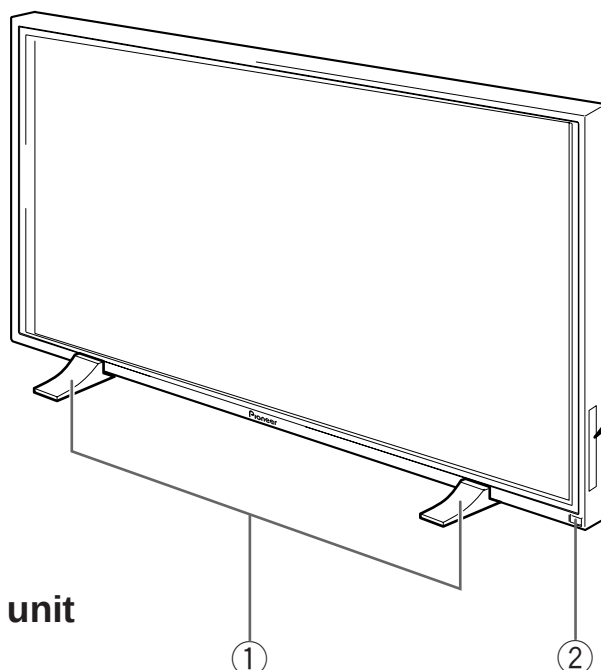
8. PANEL FACILITIES AND SPECIFICATIONS

■ PANEL FACILITIES

Main unit

(for PDP-502MX and PDP-502MXE)

Main unit



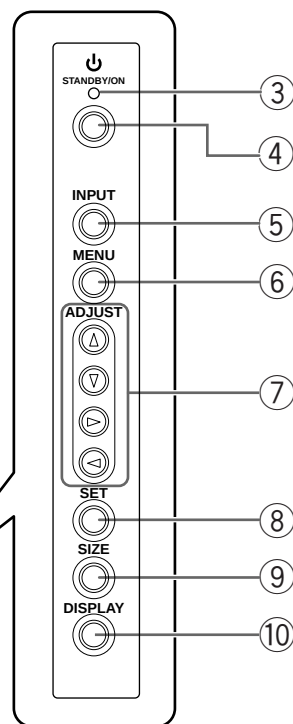
Main unit

① Display stand

② Remote control sensor

Point the remote control toward the remote sensor to operate the unit

Operation panel on the main unit



Note

When optional speakers have been connected, the operation panel on the main unit will not be operable.

Operation panel on the main unit

③ **STANDBY/ON indicator**

This indicator is red during standby mode, and turns to green when the unit is in the operation mode.

④ **STANDBY/ON button**

Press to put the display in operation or standby mode.

⑤ **INPUT button**

Press to select input.

⑥ **MENU button**

Press to open and close the on-screen menu.

⑦ **ADJUST (▲/▼/▶/◀) buttons**

Use to navigate menu screens and to adjust various settings on the unit.

Usage of cursor buttons within operations is clearly indicated in the on-screen display.

⑧ **SET button**

Press to adjust or enter various settings on the unit.

⑨ **SIZE button**

Press to manually select the screen size.

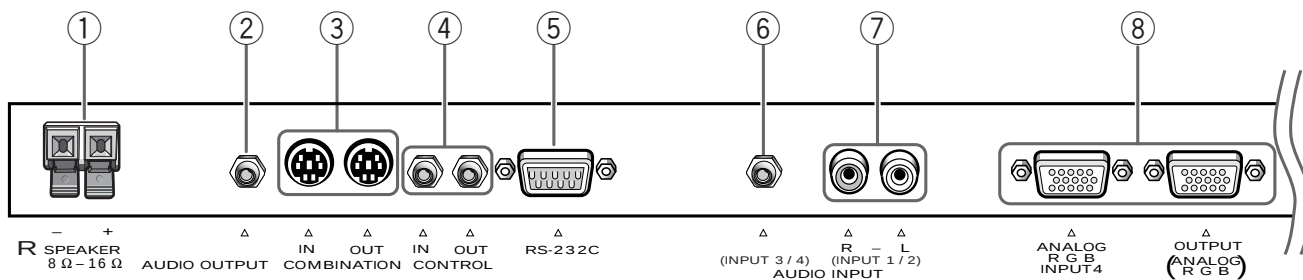
⑩ **DISPLAY button**

Press to view the unit's current input and setup mode.

Control Panel (for PDP-502MX)

On this unit there are 4 input system terminals and 2 output system terminals.

There are also CONTROL terminals for connection of PIONEER components with the  mark.



① SPEAKER (R) terminal

For connection of an external right speaker.
Connect a speaker whose impedance is 8 -16 Ω.

② AUDIO OUTPUT (Stereo mini jack)

Use to output the audio of the selected source component connected to this unit to an AV amplifier or similar component.

③ COMBINATION IN/OUT DO NOT MAKE ANY CONNECTIONS TO THESE TERMINALS.

These terminals are used in the factory setup.

④ CONTROL IN/OUT

For connection of PIONEER components that bear the  mark. Making CONTROL connection enables control of this unit as a component in a system.

⑤ RS-232C DO NOT MAKE ANY CONNECTIONS TO THIS TERMINAL.

This terminal is used in the factory setup.

⑥ AUDIO INPUT (Stereo mini jack)

Use to obtain sound when INPUT3 or INPUT4 is selected.

Connect the audio output jack of components connected to INPUT3 or INPUT4 to this unit.

⑦ AUDIO INPUT (Pin jack)

Use to obtain sound when INPUT1 or INPUT2 is selected.

Connect the audio output jack of components connected to INPUT1 or INPUT2 to this unit.

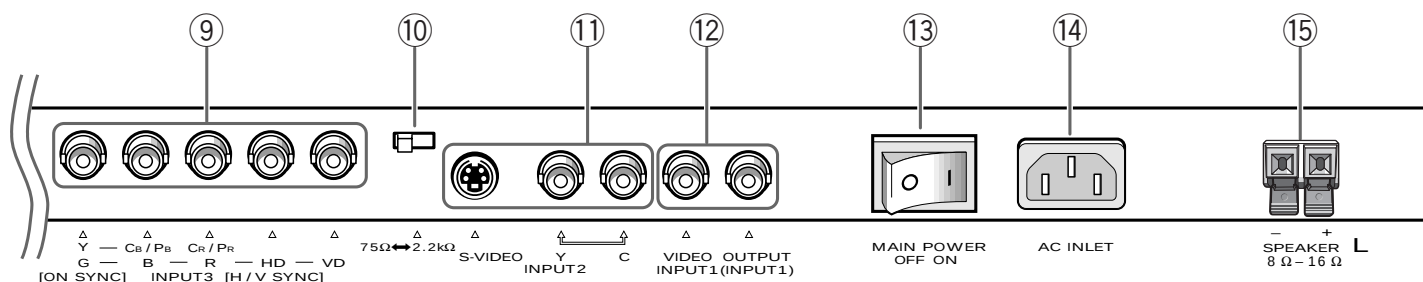
NOTE: The left audio channel (L) jack is not compatible with monaural input sources.

⑧ INPUT4

For connection of a personal computer (PC) or similar component. Make sure that the connection made corresponds to the format of the signal output from the connected component.

Use the INPUT4 OUTPUT terminal to output the video signal to an external monitor or other component.

Note: The video signal will not be output from the INPUT4 OUTPUT terminal when the main power of this unit is off or in standby mode.



⑨ INPUT3

For connection of components that have RGB or component output jacks such as a personal computer, DVD player, or external RGB decoder.

⑩ Synchronizing signal impedance selector switch

Depending on the connections made at INPUT3, it may be necessary to set this switch to match the output impedance of the connected component's synchronization signal.

When the output impedance of the component's synchronization signal is above 75Ω , set this switch to the $2.2k\Omega$ position.

⑪ INPUT2

For connection of components that have an S-video output jack or Y/C separate video output jacks such as a video deck, video camera, laser disc player, or DVD player.

Note: Do not use both the S-VIDEO jack and the BNC jacks in parallel. Doing so may cause this unit to malfunction or become damaged.

⑫ INPUT1

For connection of components that have a composite video output jack such as a video deck, video camera, laser disc player, or DVD player.

Use the INPUT1 OUTPUT jack to output the video signal to an external monitor or other component.

Note: The video signal will not be output from the INPUT1 OUTPUT jack when the main power of this unit is off or in standby mode.

⑬ MAIN POWER switch

Use to switch the main power of the unit on and off.

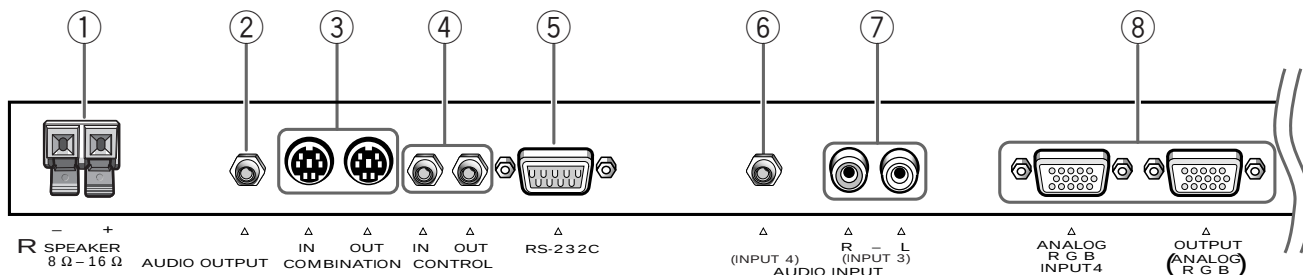
⑭ AC INLET

Use to connect the supplied power cord to an AC outlet.

⑮ SPEAKER (L) terminal

For connection of an external left speaker. Connect a speaker that has an impedance of $8 - 16\Omega$.

Control Panel (for PDP-502MXE)



① SPEAKER (R) terminal

For connection of an external right speaker.
Connect a speaker whose impedance is 8 -16 Ω.

② AUDIO OUTPUT (Stereo mini jack)

Use to output the audio of the selected source component connected to this unit to an AV amplifier or similar component.

③ COMBINATION IN/OUT DO NOT MAKE ANY CONNECTIONS TO THESE TERMINALS.

These terminals are used in the factory setup.

④ CONTROL IN/OUT

For connection of PIONEER components that bear the  mark. Making CONTROL connection enables control of this unit as a component in a system.

⑤ RS-232C DO NOT MAKE ANY CONNECTIONS TO THIS TERMINAL.

This terminal is used in the factory setup.

⑥ AUDIO INPUT (Stereo mini jack)

Use to obtain sound when INPUT4 is selected.
Connect the audio output jack of components connected to INPUT4 to this jack.

⑦ AUDIO INPUT (Pin jack)

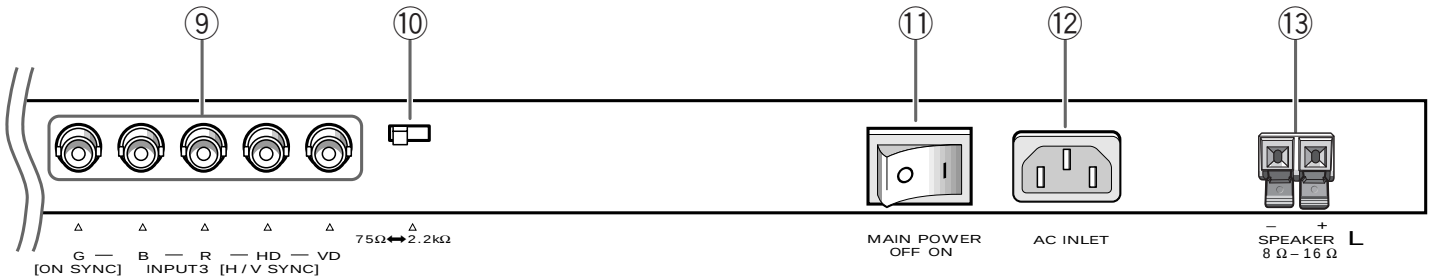
Use to obtain sound when INPUT3 is selected.
Connect the audio output jack of components connected to INPUT3 to these jacks.

NOTE: The left audio channel (L) jack is not compatible with monaural input sources.

⑧ INPUT4

For connection of a personal computer (PC). Make sure that the connection made corresponds to the format of the signal output from the connected component. Use the INPUT4 OUTPUT terminal to output the RGB signal to an external monitor or other component.

Note: The RGB signal will not be output from the INPUT4 OUTPUT terminal when the main power of this unit is off or in standby mode.



⑨ INPUT3

For connection of a personal computer.

⑩ Synchronizing signal impedance selector switch

Depending on the connections made at INPUT3, it may be necessary to set this switch to match the output impedance of the personal computer's synchronization signal.

When the output impedance of the personal computer's synchronization signal is above 75 Ω, set this switch to the 2.2 kΩ position.

⑪ MAIN POWER switch

Use to switch the main power of the unit on and off.

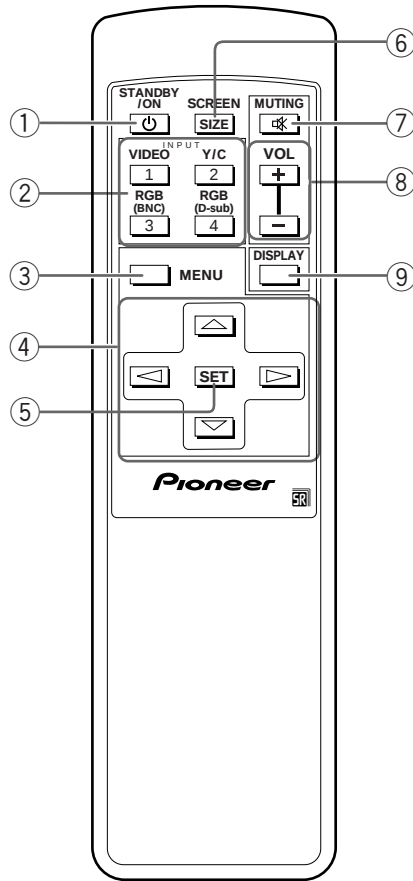
⑫ AC INLET

Use to connect a power cord to an AC outlet.

⑬ SPEAKER (L) terminal

For connection of an external left speaker. Connect a speaker that has an impedance of 8 -16 Ω.

Remote Control Unit (for PDP-502MX and PDP-502MXE)



① STANDBY/ON button

Press to put the unit in operation or standby mode.

② INPUT buttons

Use to select the input.

③ MENU button

Press to open and close the on-screen menu.

④ ADJUST (▲/▼/▶/◀) buttons

Use to navigate menu screens and to adjust various settings on the unit.

Usage of cursor buttons within operations is clearly indicated at the bottom the on-screen menu display.

⑤ SET button

Press to adjust or enter various settings on the unit.

⑥ SCREEN SIZE button

Press to manually select the screen size.

⑦ MUTING button

Press to mute the volume.

⑧ VOL (+/-) buttons

Use to adjust the volume.

⑨ DISPLAY button

Press to view the unit's current input and setup mode.

SPECIFICATIONS

For PDP-502MX/LUCBW

General

Light emission panel 50 inch plasma display panel
 Number of pixels 1280 x 768
 Power supply AC 100 - 120 V, 50/60 Hz
 Power consumption 470 W
 Standby power consumption 0.6 W
 External dimensions 1218 (W) x 714 (H) x 98 (D) mm
 47-31/32 (W) x 28-1/8 (H) x 3-7/8 (D) in.
 (when using table top stand)
 1218 (W) x 737 (H) x 300 (D) mm
 47-31/32 (W) x 29-1/32 (H) x 11-13/16 (D) in.
 Weight 40.3 kg (88 lbs. 14 oz)
 (including table top stand) 41 kg (90 lbs. 7 oz)
 Operating temperature range 0 to 40 °C (32 to 104 °F)
 Operating atmospheric pressure range
 0.8 to 1.1 atmospheric pressure

Input/output

Video

INPUT 1

Input BNC jack
 • Composite video signal
 1 Vp-p/75 Ω/negative sync.

Output BNC jack
 75 Ω /with buffer

INPUT 2

Input ① S terminal (Mini DIN 4 pin)
 ② BNC jack (x2)
 • Y/C separate video signal (S2 compatible)
 Y ... 1 Vp-p/75 Ω/negative sync.
 C ... 0.286 Vp-p/75 Ω (NTSC)
 0.3 Vp-p/75 Ω (PAL)

INPUT 3

Input BNC jack (x5)
 ① RGB signal (G ON SYNC compatible)
 RGB ... 0.7 Vp-p/75 Ω/no sync.
 HD/CS, VD ... TTL level
 /positive and negative polarity/
 75 Ω or 2.2 kΩ
 (impedance switch)
 G ON SYNC ...
 1 Vp-p/75 Ω/negative sync.
 ② Component video signal
 Y ... 1 Vp-p/75 Ω/negative sync.
 C_B/P_B, C_R/P_R
 ... 0.525 Vp-p/75 Ω
 (75% saturation level)

INPUT 4

Input Mini D-sub 15 pin (socket connector)
 ① RGB signal (G ON SYNC compatible)
 RGB ... 0.7 Vp-p/75 Ω/no sync.
 HD/CS, VD ... TTL level
 /positive and negative polarity/
 2.2 kΩ
 G ON SYNC
 ... 1 Vp-p/75 Ω/negative sync.
 *Compatible with Microsoft's Plug & Play
 (VESA DDC1/2B)
 ② Component video signal
 Y ... 1 Vp-p/75 Ω/negative sync.
 C_B/P_B, C_R/P_R
 ... 0.525 Vp-p/75 Ω
 (75% saturation level)

Output Mini D-sub 15 pin connector (socket)
 75 Ω/with buffer

Audio

Input AUDIO INPUT (for INPUT 1/2)
 Pin jack (x2)
 L/R ... 500mVrms/more than 10 kΩ

AUDIO INPUT (for INPUT 3/4)
 Stereo mini jack
 L/R ... 500mVrms/more than 10 kΩ

Output AUDIO OUTPUT
 Stereo mini jack
 L/R ... 500mVrms (max)/less than 5 kΩ

SPEAKER
 L/R ... 8 – 16 Ω/2W +2W (at 8 Ω)

Control

RS-232C ... D-sub 9 pin (pin connector)
 COMBINATION IN/OUT
 ... Mini DIN 6 pin (x2)
 CONTROL IN/OUT ... monaural mini jack (x2)

Accessories

Power cord	1
Pin/BNC conversion adaptor	1
Remote control unit	1
Remote control unit case	1
AA (R6/UM-3) batteries	2
Cleaning cloth	1
Speed clamp	2
Bead band	2
Warranty	1
Operations Instructions	1
Display stand	2
Washer (large)	2
Washer (small)	2
Hex hole bolt (M8X40)	2

● Due to improvements, specifications and design are subject to change without notice.

PDP-502MX, PDP-502MXE

● For PDP-502MXE/YVLDK

General

Light emission panel	50 inch plasma display panel
Number of pixels	1280 x 768
Power supply	AC 100 – 240 V, 50/60 Hz
Rated current	5.4 – 2.2 A
Standby power consumption	0.6 W
External dimensions	1218 (W) x 714 (H) x 98 (D) mm
(when using display stand)	
.....	1218 (W) x 737 (H) x 300 (D) mm
Weight	40.3 kg
(including display stand)	41.0 kg
Operating temperature range	0 to 40 °C
Operating atmospheric pressure range	
.....	0.8 to 1.1 atmospheric pressure

Input/output

Video

INPUT 3

(Input)

BNC jack (x5)
 RGB signal (G ON SYNC compatible)
 RGB ... 0.7 Vp-p/75 Ω/no sync.
 HD/CS, VD ... TTL level
 /positive and negative polarity/
 75 Ω or 2.2 kΩ
 (impedance switch)
 G ON SYNC ...
 1 Vp-p/75 Ω/negative sync.

INPUT 4

(Input)

Mini D-sub 15 pin (socket connector)
 RGB signal (G ON SYNC compatible)
 RGB ... 0.7 Vp-p/75 Ω/no sync.
 HD/CS, VD ... TTL level
 /positive and negative polarity/
 2.2 kΩ
 G ON SYNC
 ... 1 Vp-p/75 Ω/negative sync.
 *Compatible with Microsoft's Plug & Play
 (VESA DDC1/2B)

(Output)

Mini D-sub 15 pin (socket connector)
 75 Ω/with buffer

Audio

(Input)

AUDIO INPUT (for INPUT3)
 Pin jack (x2)
 L/R ... 500mVrms/more than 10 kΩ

AUDIO INPUT (for INPUT4)
 Stereo mini jack
 L/R ... 500mVrms/more than 10 kΩ

(Output)

AUDIO OUTPUT
 Stereo mini jack
 L/R ... 500mVrms (max)/less than 5 kΩ

SPEAKER
 L/R ... 8 – 16 Ω/2W +2W (at 8 Ω)

Control

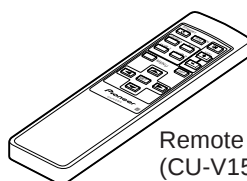
CONTROL IN/OUT ... monaural mini jack (x2)

Accessories

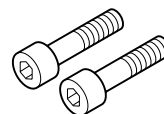
Remote control unit	1
Remote control unit case	1
AA (R6/UM-3) batteries	2
Cleaning cloth	1
Speed clamp	2
Bead band	2
Operating Instructions	1
Display stand	2
Washer (large)	2
Washer (small)	2
Hex hole bolt (M8X40)	2

- Due to improvements, specifications and design are subject to change without notice.

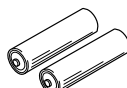
Accessories



Remote Control Unit
(CU-V159)
(AXD1446)



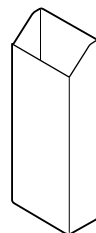
Hex Hole Bolt ×2
(SMZ80H400FZB)



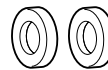
AA (R6/UM-3) Batteries ×2



Cleaning Cloth
(AED1174)



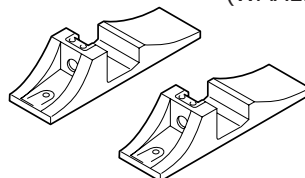
Remote Control
Unit Case
(AMR3169)



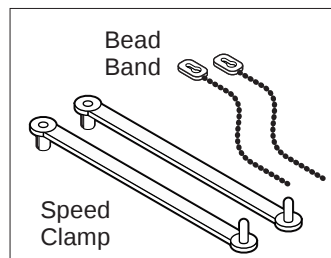
Washer (large) ×2
(WAX1F200K320)



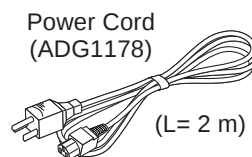
Washer (small) ×2
(WB80FZB)



Display Stand ×2
(AMR3168)



Binder Assy (AEC1758)



Power Cord
(ADG1178)

(L=2 m)



Pin/BNC Conversion
Adaptor
(AKX1052)

PDP-502MX/LUCBW Only